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POLICY DECISIONS FOR STRATEGIC  
SHIPYARD SURVIVAL

by

Michael M. O'Connor

December, 1992

Thesis Advisor:

Jeffery Warmington

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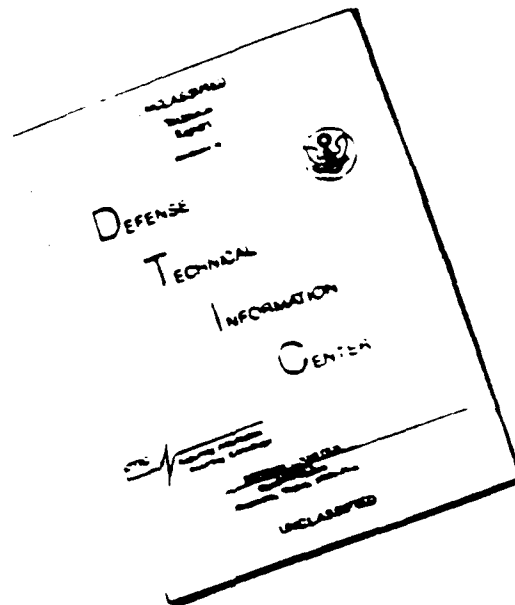
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Policy Decisions for Strategic  
Shipyard Survival

by

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Submitted in partial fulfillment  
of the requirements for the degree of

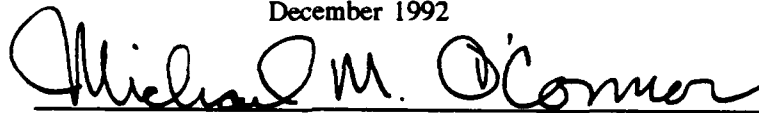
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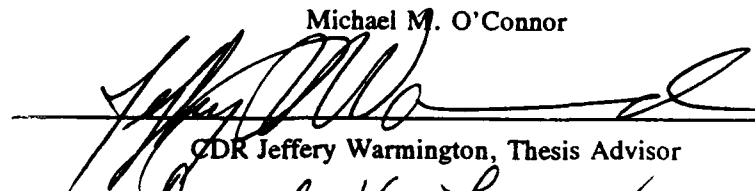
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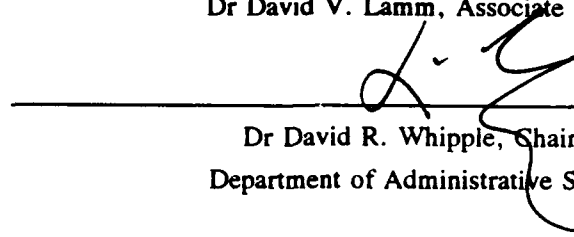
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## ABSTRACT

This thesis research focused on the evaluation of the shipyard industrial base as it relates to the requirements of the U.S. Navy. It characterizes shipyard capabilities, investigates legislative initiatives, evaluates subsidy programs and interprets Navy requirements and the status of business conducted at the U.S. shipyards. It looks at whether the Navy should let the competitive market dictate where and which shipyards will survive, or should policy/legislation be enacted to support a few strategically located shipyards.

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## I. INTRODUCTION

### A. GENERAL

The Navy is entering a period of substantial downsizing due to the reduced global threat. To achieve substantial savings for the Navy, shipbuilding programs previously approved by Congress are being reduced or canceled.[Ref. 1:p. 3] The result of these cancellations, coupled with the lack of a commercial shipbuilding market has placed many of the shipyards capable of ship construction, in financial trouble.[Ref. 2:p. 2] Some believe shipyards are expected to go out of business or just assume ship repair work, over the next few years. If shipbuilding contracting remains purely competitive, the market forces could dictate where the Navy will have access to commercial shipyards. Consideration may not be given to the strategic value of location or type of shipbuilding capability available.

This thesis characterizes shipyard capabilities, investigates legislative initiatives, evaluates international subsidy programs and interprets business conducted at the United States Shipyards. It investigates whether the Navy (Naval Sea Systems Command) should let the competitive market

dictate where and which shipyards will survive, and, or should procurement policy/legislation be enacted to support a few strategically located shipyards.

#### **B. OBJECTIVES OF THE RESEARCH**

This thesis will evaluate current and former commercial shipyard capabilities, identify the anticipated NAVSEA shipbuilding and overhaul contracts, forecast the survivability of various regional shipyards and make recommendations for some possible alternatives to market generated survival.

#### **C. METHODOLOGY**

The methodology for this research consisted primarily of a review of Navy shipyard demographics, a review of the Naval Sea Systems Command's existing and future contracts, investigation into the proposed commercial work that the Shipbuilders Council of America provided, analysis of the projected six year defense plan for ship construction and numerous interviews with Government and industry representatives.

#### **D. RESEARCH QUESTIONS**

Should the Navy let free competition dictate which shipyards remain in business or should an active decision be made to maintain industrial shipbuilding capability in

strategic parts of the country?

The following research questions are deemed pertinent to this effort:

1. Where are the major shipyards and what unique capabilities do they possess?
2. What does the budget include for new construction and which shipyards are most likely to compete for the new business?
3. What is the current and any proposed legislation concerning competition and protection of the industrial base?
4. How is the shipbuilding industry reacting to downsizing?
5. What recommendations can be developed to help both Government and industry in retaining vital shipbuilding capabilities?

#### **E. ORGANIZATION OF THE THESIS**

The thesis is organized into five chapters. Chapter I has been an introduction to the thesis. Chapter II provides background information regarding the reduction of shipbuilding capability and what factors led the United States shipyards toward its current problems. Chapter III identifies contracting legislation and policies regarding retention of industrial capabilities. The evaluation includes current and future legislation being proposed to support U.S. shipyards and the shipbuilding industry. Chapter IV analyzes the impact of other nations' programs on the U.S. commercial shipbuilding industry and also the reductions of Navy spending on the U.S.

shipyards. Chapter V identifies various possible solutions and gives recommendations as to what should be done to guarantee a strategic capability in the future.

## II. BACKGROUND

### A. GENERAL

Starting in the mid-1980s, increasing concern was voiced by Naval Officials and Congressional leaders about the survivability of U.S. shipyards and their ability to meet strategic mobilization requirements. Numerous congressional hearings have focused attention on shipbuilding and ship repair problems as well as those of the merchant marine<sup>1</sup>. There have been seven major Government-initiated studies conducted in the last six years and several non-governmental studies (mainly by the Shipbuilders Council of America).[Ref. 1:p. 1]

As the cold war comes to a close, the nation is looking at new threats and a new global economic competitiveness. There is a perception by some Americans, that the United States Industrial Base is eroding to the point of leading this country into becoming a service nation. The loss of supremacy in manufacturing and industrial development could make the Department of Defense reliant on other nations for support of the United States National Security.[Ref. 1:p. 214] Our capability to build or replace critical hardware or weapon

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1. As a general rule, a shipyard could have a shipbuilding capability, a ship repair capability or both.

systems independent of other nations political agenda, is fundamental in providing our nation's security. Many industries, including the shipbuilding industry, have substantially declined, possibly threatening the responsiveness of our industrial base. Without countering the threats, this erosion could rob the Navy and the United States of industrial capabilities critical to national security.[Ref. 2:p. 4]

The shipbuilding industry has long been a vital element of the U.S. defense industrial base and the industry has provided superior, technically advanced warships for many countries throughout the world. Shipbuilding is an important element of this country's overall economic base employing some 300,000 people in shipyards and support industries.[Ref. 3:p. 12]

With substantial downsizing and the reduced global threat, the Navy is being forced to achieve substantial savings. Many of the private shipyards are expected to go out of business or convert to ship repair work over the next three years.[Ref. 3:p. 12] If the Navy and private industry do not react to changes in the shipbuilding industry, the world market could dictate where the Navy will have access to commercial shipyards. Consideration may not be given to the strategic value of location or type of shipbuilding capability available, which could threaten this country's response to an international crisis.

Ronald Reagan, as a presidential candidate, recognized the importance of maritime capabilities in 1980. His Naval Maritime Strategy Proposal stated:

Our economic vitality, national defense, and foreign policy options will depend increasingly on the use we make of the sea during the remainder of this century.... A specific Naval-maritime program must be developed that will...insure that our vital shipbuilding mobilization base is preserved. It is essential that sufficient Naval and commercial shipbuilding be undertaken to maintain the irreplaceable shipbuilding mobilization base. Without this nucleus of trained workers and established production facilities, we can never hope to meet any future challenge to our security.<sup>2</sup>[Ref. 5]

Upon being elected president, Ronald Reagan backed up his promise of a strong maritime force by pushing through the most extensive non-wartime military build-up of this century. This created massive business for shipyards that were struggling with international competition.[Ref. 1:p. 3]

In 1992, we face a new world order never envisioned possible just four years ago. The focus is not just becoming the military world power but an economic leader also. Both are obviously related because as a major world power, we need to maintain a capability to rapidly deploy and support forces around the world. To do this, we need a viable industrial base and capability to surge. Shipyards have been an integral

---

<sup>2</sup> One of seven points in the presidential candidate's naval-maritime program proposal.

part of the industrial base for many years. The U.S. commercial shipbuilding market has been eaten away by foreign competition, and several shipyards have only survived with the additional work provided by the Naval buildup of the early eighties.[Ref. 3:p. 8]

As a nation, we are entering a new and challenging phase in our evolution. Without a great national enemy, we must focus efforts on competing internationally and economically to "right size" our industrial shipbuilding base. The difficult task is trying to decide what should be the right size of this country's shipyard industrial base, and how to fairly and economically achieve it.

## **B. SHIPYARD DECLINE NOT A NEW PROBLEM**

Except for the periods during World War I and II, the U.S. shipbuilding industry has been in a decline for over a century.[Ref. 1:p.19]

### **1. Shipbuilding Prior to and During World War II**

Laws in the late eighteenth and early nineteenth centuries granted a monopoly to U.S. shipyards with respect to building merchant ships for the American domestic trade between U.S. ports.[Ref. 1:p. 20] This policy has been periodically reviewed and renewed in various U.S. statutes and stands to this day. U.S. Naval construction and repair has historically been reserved for domestic shipyards.

At the end of World War I, similar to other wars, this

country found shipping routes with excess capacity. The U.S. shipbuilding program, which continued after the end of the actual fighting, contributed to the problem. The beginning of the shipping depression started in 1920 and reached its peak in 1922 when 75 percent of the Government-owned fleet was idle.[Ref. 1:p. 26] To complicate matters, the 1916 legislation that authorized the building program was also quite specific with respect to having the Government get out of the role of shipowner as soon as possible. This however, was easier said than done, and it was not until almost the beginning of World War II that the last Government owned ship was sold.[Ref. 1:p. 26]

The excess capacity in world trades brought on hard times for shipbuilders. With war-built ships selling at rock bottom prices, there were few orders for new construction. In 1935 merchant ship construction hit a low point. Many old and established shipyards either went out of business or suspended operations.[Ref. 1:p. 28] Others existed almost entirely on ship repair work. In addition to these problems, the higher cost of building ships in the U.S. had become a major factor in world production. Congressional hearings held in 1920 noted that the cost of building a comparable steel ship in the United States exceeded that of Great Britain by \$60/ton (\$70/ton vs. \$130/ton). [Ref. 7:p. 8466]

In 1928, legislation passed that reestablished mail subsidies on a number of foreign trade routes. This initiated

some new construction and refurbishment of some exiting tonnage. Also, orders for vessels operating in domestic ocean trades (trades reserved exclusively for American-flag, American built ships), provided a safety net for many shipyards, particularly on the Atlantic coast. Eight years later, legislation provided for direct subsidy payments to shipyards building for U.S. flag foreign trade ships. Also around the same time, President Roosevelt adopted a two-ocean Naval policy which was important in maintaining a shipbuilding base during the Great Depression.[Ref. 1:p. 26]]

Between the World Wars, building and design innovations were primarily confined to the transatlantic and Mediterranean routes. Speed and luxury became major shipbuilding considerations.

When the United States entered World War II, its most noteworthy maritime contribution was not in vessel design but in the ability to mass-produce ships. Some 6,400 merchant-type ships, including 1,200 small craft, were built between 1937 and 1945. At the end of the war, the Government-controlled merchant fleet was approximately 5,000 ships.[Ref. 8:p. 68.]

Equally impressive was the Naval building program for combatants, which were more technologically complex than merchant ships. Naval chroniclers Philip Andrews and Leonard

Engel summed up the achievement of shipyards:

On 1 July 1940 the Navy had 383 battleships, carriers, cruisers, destroyers, and submarines, aggregating 1,313,000 tons. Including auxiliaries, the fleet numbered 1,076 vessels of 1,875,000 tons. In the next three years 333 combatant vessels aggregating 1,117,054 tons were built. Other completions in this period were: 1,274 mine and patrol craft of 199,765 tons, 161 auxiliaries, 654 yard and district craft and 610,781 tons of landing craft (12,964 vessels). Consequently, despite war losses and transfer of a great many vessels to allied navies, on 1 July 1943 the Navy had upwards of 13,000 vessels of over 4,500,000 tons, including more than 600 combatant ships of some 2,000,000 tons. Deliveries during June 1943 alone totalled 1,200 vessels, in comparison with five in June, 1940.[Ref. 9:p. 20]

## **2. Post World War II**

America's maritime supremacy, was short lived after the end of World War II. High U.S. operating and building costs had to be offset by direct payments (construction and operating subsidies) and indirect support such as cargo reservation and cargo preference legislation. The United States remained a maritime leader and shipbuilding nation, only because of massive Government support.[Ref. 1:p. 28]

Between 1936 and 1983 construction differential subsidy payments to shipyards amounted to \$3.8 billion.[Ref. 1:p. 28] No new construction-differential subsidy (CDS)

funds<sup>3</sup>, have been authorized since the Reagan administration eliminated construction subsidies in the early eighties.[Ref. 3:p. 7]

The non-subsidized shipowner's (mainly the large oil companies), declined to purchase U.S. built and flagged vessels because of high operating and building costs in the U.S.

Two distinct trends started to develop after 1960. First, all ships, especially tankers were getting larger. The larger ships increased efficiency of carrying oil from the Persian Gulf to the Americas at a time when the Suez Canal was constantly being closed by Arab and Israeli conflicts. Second, there was a trend to increase ship specialization for cargo movement. The general cargo ship that had served for centuries was being replaced by the containership, roll-on/roll-off (RO-RO) vessels, lighter aboard ship (LASH) vessels and the liquid natural gas carrier (LNG), which was a design milestone in itself.[Ref. 1:p. 28] Producing these technologically complex vessels in American shipyards posed no problem. In fact, all were U.S. inspired and U.S. developed. The disadvantages were construction costs (twice as much as the foreign yards) and delivery time (3 to 18 months longer). Compounding the cost differential problem was the oil crisis in the mid-1970s, speculative ordering of ships, and the entry

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<sup>3</sup> Subsidies paid to ship buyers to bring the price of U.S. built ships in line with the price of foreign competitors prices.

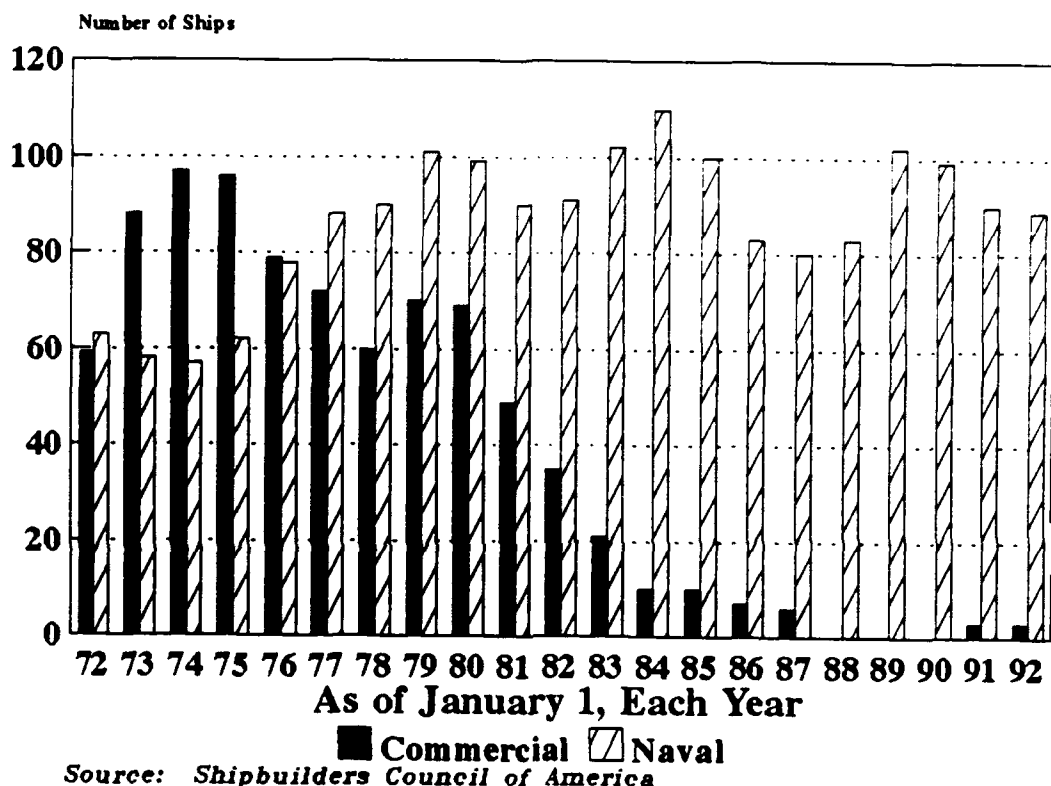
of the Far Eastern countries into the shipbuilding industry.[Ref. 3:p. 33] Japan and South Korea became major U.S. competitors in the early 1980s. These foreign yards were heavily subsidized by their respective governments. During the same time period (1981), the U.S. construction differential subsidies were eliminated, which effectively collapsed the commercial ship yard market in the U.S.. This final act made the U.S. shipyards dependent almost entirely on receiving U.S. Navy construction and repair work.[Ref. 6:p. 12]

### **3. Shipbuilding Status, From the Early Eighties**

The late seventies and early eighties saw a substantial reduction in commercial shipyard work. Figure 1 shows the downward slope of commercial shipbuilding contracts and the number of Navy ships under contract or on order per year.[Ref. 3:p. 5]

In 1981, approximately 120 U.S. shipyards were considered capable of completing mobilization requirements for repair, dry docking and construction. Early in the Reagan administration, a Joint Navy-Maritime Mobilization Base Analysis (SYMBA) study was initiated. The results were published in 1984 and identified 119 shipyards in the United States that had potential national security value: that is, had the capability to perform mobilization tasks such as building, drydocking, and topside repairs. Of the 119

## New Merchant and Naval Vessels Under Construction or on Order at Private Shipyards



**Figure 1** The New Merchant and Naval Vessels Under Construction or on order at U.S. Private Shipyards

shipyards, nine were Government-owned, while the remaining 110 were private.[Ref. 10:p. 1-4] The SYMBA study concluded that a shipyard mobilization base should:

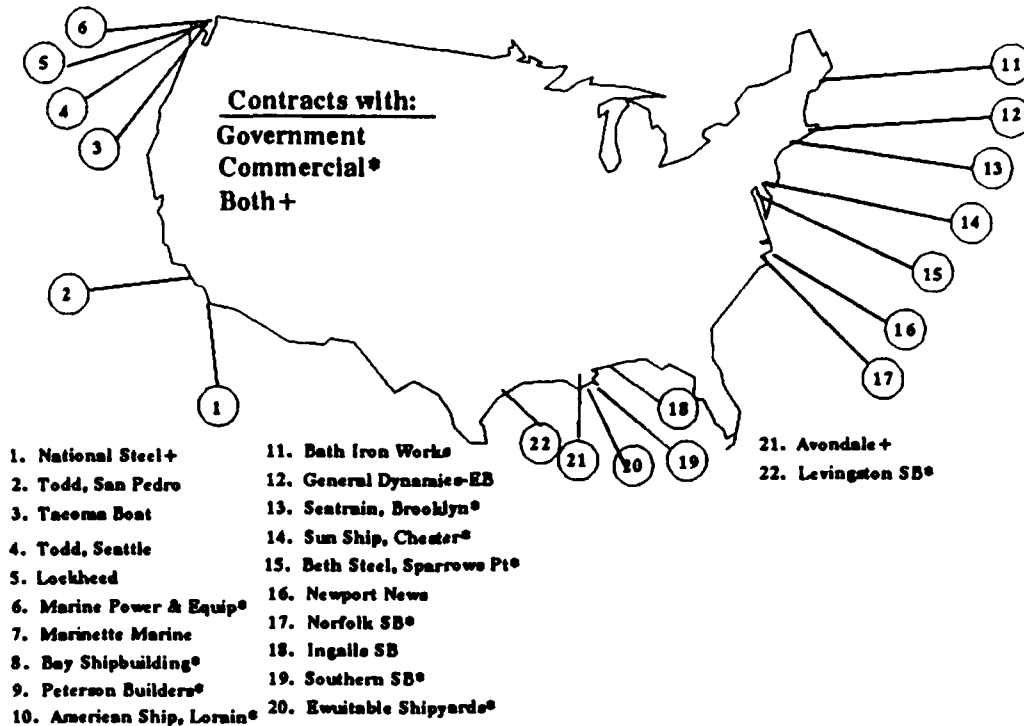
1. Ensure that ships of the Naval fleet can be maintained in a high degree of material readiness and are modernized with appropriate new equipment.

2. In peacetime, retain sufficient capability to maintain or increase the size of the Naval fleet and to build and maintain merchant ships consistent with the objectives of the Merchant Marine Act of 1936, as amended.
3. In time of conflict, be capable of handling activation, overhaul, repair and battle damage of Naval and merchant marine ships.
4. Ensure that the shipbuilding base provides the capability to build combatants and cargo ship to wartime requirements and to support the goal of a merchant marine that is suitable in time of war or national emergency.[Ref. 1:p. 9]

The study didn't try to tackle the "right sizing" of the country's requirements for shipyards, just the capability that existed at the time. Of the 119 yards that were operational, only a few were doing major ship construction.[Ref. 1:p. 10] Figure 2 shows the shipyards that were actually working and had ship construction contracts in 1981.

The Shipbuilders Council of America (SCA), an industry trade association, developed and annualized the trends in the industrial base identified in Figure 3. The chart diagrams the trends of the shipyard industrial base in the early eighties and gives predictions of future effect through 1995. Figure 4 is an update of Figure 2, which shows the shipyards actually working on major ship construction contracts. As can be seen in comparing the two charts, the number of shipyards with actual work is substantially reduced.

## Yards With Ship Construction Contracts January 1981



Source: Shipbuilders Council of America

**Figure 2** Yards With Ship Construction Contracts in 1981.

Through most of the 1980s, the world-wide market for ships suffered from a massive market depression. The response by most of the world's governments, except the U.S., was to support commercial shipbuilding with massive subsidies. The Navy expansion helped ease the pain from the loss of commercial work, but the Naval work was concentrated in a

## The Declining Industrial Base

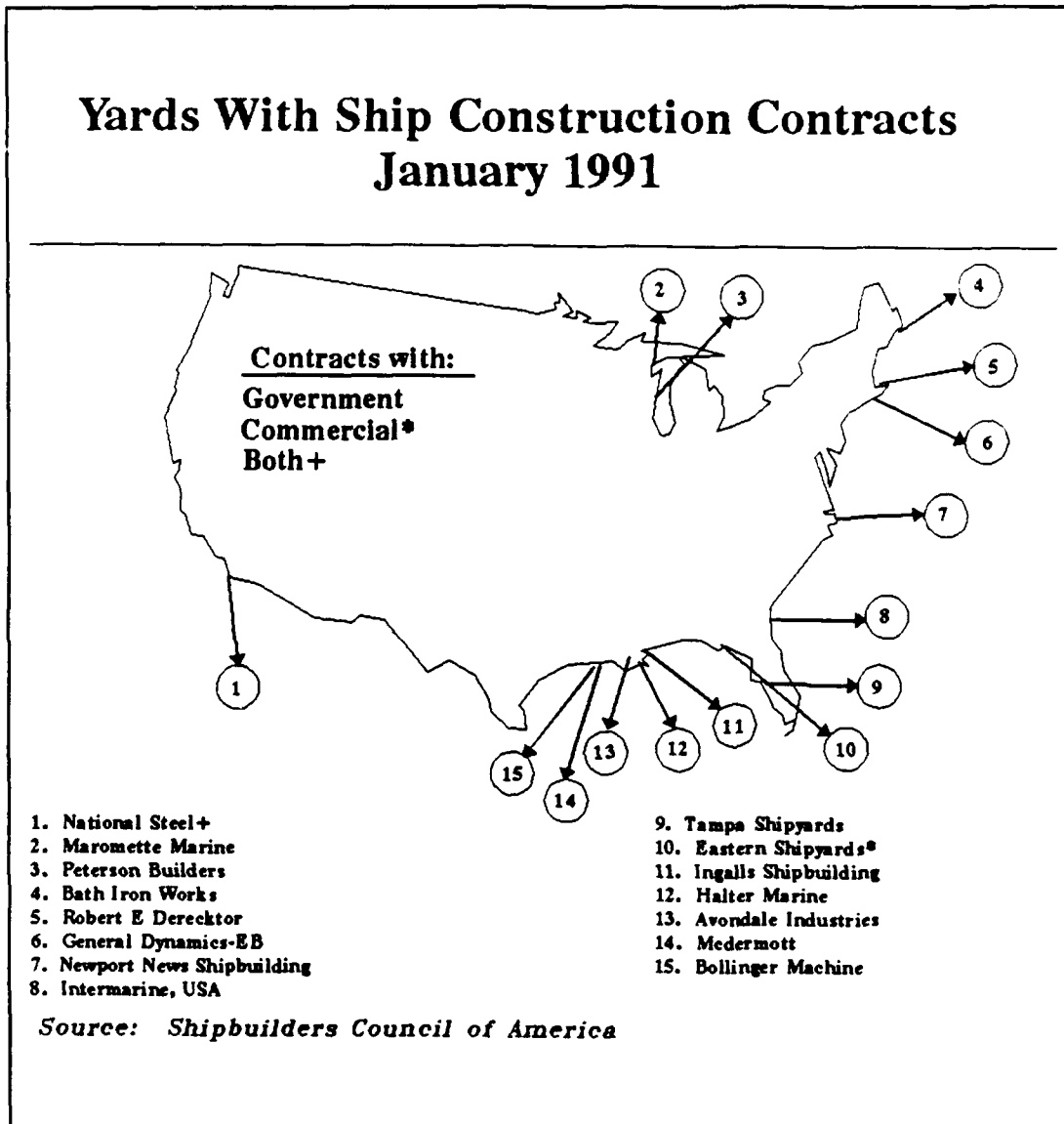


**Figure 3** The Declining Industrial Base.

small number of shipyards (90 percent of the dollar value of contracts were concentrated in five shipyards).[Ref. 3:p. 9]

The Reagan administration cut shipyard subsidies in 1981. The construction differential subsidy was eliminated for U.S. shipowner's engaged in foreign commerce. This along with a "window" granted by the U.S. Government for ship owners

to buy abroad, lost \$1.6 billion in business to U.S. shipbuilders and virtually wiped out the U.S. shipyard commercial business.[Ref. 3:p. 5-9]



**Figure 4** Yards With Construction Contracts in 1991.

By 1991, the backlog of Navy ship orders was on a downward slide and no new orders were on the horizon. The world threat was gone and the Navy was reducing inventory from

600 ships to 450 or less. This new environment is going to generate a Naval requirement of about only five new ship orders a year. The Shipbuilders Council of America believes that at this level, "with no increase in commercial business, there will only be one or two major shipyards and one or two smaller shipyards left by 1998." [Ref. 3:p. 12] They also think that a total of 300,000 jobs will be lost from U.S. shipyards and supplier industries between 1980 and 1999.[Ref. 3:p. 12]

### **C. SUMMARY**

The U.S. Government's intentions are to maintain a shipyard industrial base for the future. Throughout history, the U.S. shipbuilding industry's success has been cyclical. The demise of the industry has not occurred overnight. It has been declining for the last century as requirements and global conditions changed.[Ref. 1:p. 9]

In time of need, the U.S. has proven that it can mobilize its shipyard assets quickly, and can rapidly expand output as required. The Shipbuilders Council of America shows a pretty grim picture for the future for this country's shipyards if current trends continue and no new work is added. What hasn't been shown yet, is what can happen in the future with shipyard legislation and the potential changes in world requirements.

The next chapter reviews some of the past and current legislation enacted on behalf of shipyards. The analysis

shows positive and negative results achieved through legislation. It identifies key issues currently facing the shipbuilding industry and addresses some realistic political issues facing the industry.

### **III. LEGISLATION AFFECTING SHIPYARDS**

#### **A. GENERAL**

The previous chapter gave a brief explanation and historical perspective as to the evolution of U.S. shipyards. This chapter will tie some of the historical information into the legislation that may have brought about change. Areas that will be looked at are: mortgage guarantees, cargo reservation, the tax treatment of a ship operator's construction reserve fund, and the Shipbuilding Trade Act of 1992.

It will be shown that most of the major legislation enacted in support of shipyards over the last hundred years has been tied to support for the Merchant Marine (ship operators). The Merchant Marine has always carried a substantial amount of political clout and the majority of legislative decisions center around them.

#### **B. DIRECT SHIPBUILDING LEGISLATION**

Table 3.1 below, lists the major direct shipbuilding legislation enacted for this country. For obvious reasons, only the major legislation is identified and the key areas are discussed in more detail later in this chapter.

**TABLE 3.1. LEGISLATION DIRECTLY IMPACTING SHIPYARDS**

<i>Legislation</i>	<i>Provision(s)</i>
Acts of 4 July 1789, 20 July 1789, 1 September 1789, 30 July 1790	a. Discriminatory tonnage duties levied on non-U.S.-built vessels. b. Reserved U.S. coast trade to U.S.-built vessels.
An Act Concerning Navigation of the United States, 1 March 1817	Limited U.S. coastwise trade to U.S.-flag, U.S.-owned, and U.S.- built vessels.
Tariff Acts of 1890, 1894	Import duties on steel plate and iron removed for shipbuilders
Panama Canal Act of 1912	Removed duties on all shipbuilding materials used to construct vessels for U.S. registry. The Simmons- Underwood Bill of 1913 put all iron and steel on the free list.
Shipping Act of 1916	Legislative basis provided for establishing the Emergency Fleet Corporation. This Government corporation would eventually build over 2,300 ships of all types, of approximately 14 million dead weight tons, at a cost of \$3 billion.
Tariff Act of 1930	Imposed a 50 percent <i>ad valorem</i> <sup>4</sup> tax on non-emergency foreign repairs to U.S. flag vessels.

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<sup>4</sup> *Ad Valorem* defined: "imposed at a rate percent of the value as stated in an invoice" or simply a tax on goods.[Ref. Webster's Dictionary]

**TABLE 3.1. LEGISLATION DIRECTLY IMPACTING SHIPYARDS**

<i>Legislation</i>	<i>Provision(s)</i>
Merchant Marine Act of 1920	a. Restated legislation that prohibits foreign-owned, -built, or -flag vessels in U.S. domestic trades. (Earlier prohibition was suspended on U.S. entry into World War I.) b. Section 30 of Act established policy of federal (preferred) mortgage guarantees for construction of vessels in U.S. shipyards. "A preferred mortgage shall constitute a lien upon the mortgaged vessel in the amount of the outstanding mortgage indebtedness secured by such vessel"
Acts of 27 July 1868, 1898, 1899	Alaska, Hawaii, Puerto Rico, and Guam trades reserved to American-built vessels.
Merchant Marine Act of 1936	a. Title V provided for Government payments to shipyards to make up differences between U.S. and foreign costs in building ships for U.S. foreign trade. b. Act mandated that U.S.-flag ships in foreign trade receiving an operating differential subsidy be built in U.S. shipyards. c. Allowed ship operator to deposit earnings and revenues from ship sales into a tax-deferred construction reserve account until expended for ship construction. <sup>5</sup> d. Allowed a shipowner credit on obsolete vessel toward replacement construction in U.S. shipyards.

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<sup>5</sup> In 1986 this fund is designated as a capital construction fund (CCF).

**TABLE 3.1. LEGISLATION DIRECTLY IMPACTING SHIPYARDS**

<i>Legislation</i>	<i>Provision(s)</i>
Act of 23 June 1938	Title XI "Federal Ship Mortgage Insurance" added to Merchant Marine Act of 1936. Replaced Ship Mortgage Act of 1920. In 1986 this title authorized Federal Government to insure private loans used to finance construction/reconstruction of vessels in U.S. shipyards, including vessels in domestic trade and offshore drilling rigs, barges, and tugs. <sup>6</sup>
Public Law 911, 6 January 1951	Provided funds to build for the Government thirty-five 13,400 dwt. 20 knot vessels. This became known as the "Mariner" program because each ship's name was followed by the word "Mariner".
Long Range Shipping Act of 1952	a. Construction differential subsidy option extended to all ships operating in U.S. foreign trade that are "suitable for national defense purposes in time of war or national emergency." b. Section 507 amended to allow domestic trade ship operator to trade in old ships for credit on new construction; established a construction reserve fund for this shipping.

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<sup>6</sup> In 1985 the Title XI program was badly shaken by the default of the Phoenix Corporation of Houston, Texas on two oil-bulk-ore (OBO) carriers. The revolving fund of the Title XI program was reduced by over \$125 million. Total loan defaults through 1985 totaled \$675 million. In February 1986, the Maritime Administration faced the possibility of an additional \$220 million default from the Houston-based Global Marine, Inc. The firm filed for protection under the bankruptcy laws in January 1986.

**TABLE 3.1. LEGISLATION DIRECTLY IMPACTING SHIPYARDS**

<i>Legislation</i>	<i>Provision(s)</i>
Merchant Marine Act of 1970	a. Set goal of building 300 ships for U.S.-flag registry over next 10 years. Construction subsidies were to be primary financing mechanism. Goal was to reduce CDS to 35 percent. b. Extended construction assistance to bulk carriers, not necessarily suitable for national defense in time of war or national emergency.
Public Law 97-252, 8 September 1982	Established that no Naval vessel or major component may be constructed in a foreign shipyard unless authorized by the president in the interest of national security.

Source: Whitehurst, Clinton H., *The U.S. Shipbuilding Industry: Past Present and Future*, Naval Institute Press, Annapolis, MD p.33-35.

The period from 1865 to World War I, was an era of generally high American tariffs on foreign imports, and on steel in particular. At different times, both the Democrats and Republicans supported lower duties, but as a rule, tariffs remained high. However, some relief with respect to importing shipbuilding materials was forthcoming. An Act in 1872 allowed materials used in the construction of wooden vessels to enter duty-free. After 1912, all materials used in the construction of ships for U.S. registry were on the free list.[Ref. 1:p. 36]

#### **1. Emergency Fleet Corporation**

The Shipping Act of 1916 established the Emergency

Fleet Corporation (EFC), whose primary purpose was to acquire, through building and other means, sufficient tonnage to meet America's vital shipping needs. Internal bureaucratic bickering with respect to contract awards and material priorities delayed the program for six months, bringing both administration and congressional criticism.[Ref. 1:p. 36] Vessel output did not reach its peak until a full two years after its origination. In addition to the delay, the largest shipyard built from the ground up, the Hog Island Shipyard near Philadelphia, was not completed until after Armistice. A key lesson learned for the future was that it is extremely difficult to build ships in a hurry without prior planning and facilities, particularly when a shipbuilding base is unprepared and lacking.[Ref. 1:p. 38]

After the war, it was very difficult to dispose of the mammoth buildup of war ships. Similar to today's environment, debate centered around how to equitably dispose of war-built assets. Many in Congress objected to selling, at bargain prices ships, that cost \$200/ton to build.[Ref. 1:p. 37] A major problem was that while many of these ships were not suitable for the American trade routes, they were quite suitable for a number of others, particularly Mediterranean and Baltic Sea routes. The U.S. Shipbuilding Board, which was an agency charged with disposing of Government-owned ships, was given discretion to sell the ships "Consistent with good business practices." [Ref. 1:p. 38] The enabling law was the

Merchant Marine Act of 1920. Section 11 of the legislation created a construction loan that was to be funded by revenues from the sale and operation of Government-owned ships.[Ref. 1:p. 40]

## **2. The Merchant Marine Act of 1920**

Commonly referred to as the "Jones Act", this legislation prohibits foreign-owned, foreign-built, or foreign-flag vessels in U.S. domestic trade routes. Numerous requests for waivers or modifications to the Jones Act have decreased its intended effect of protecting the domestic shipbuilding and shipping industries. Railroads and trucks have also cut into the market share otherwise served by intracoastal shipping.[Ref. 2:p. 17]

## **3. Tariff Act of 1930**

This Act imposed a 50 percent ad valorem tax on non-emergency repairs to U.S. flag vessels done in a foreign port. Some U.S. flag shippers find it cost-effective to pay the tax. Repairs completed offshore in the past years include the complete reconstruction and modernization of a U.S. flag vessel, characterized as "emergency repair". The Congressional Budget Office reported that approximately \$10 million in penalties are currently paid annually by U.S. flag shippers.[Ref. 2:p. 17]

## **4. MERCHANT MARINE ACT OF 1936**

The Merchant Marine Act of 1936, was the most comprehensive piece of shipping and shipbuilding legislation

in American history.[Ref. 1:p. 42] Title V had the most direct impact on shipbuilding in that it provided a mechanism for the Government to pay a shipyard contracting with an American foreign-trade ship operators, the difference between the higher American cost of construction and lower foreign cost of ship construction. In 1935, the differential was originally established at 33 1/3 percent, excluding the cost of national defense features, with the provision that the Maritime Commission could increase the percentage to 50 percent differential if warranted.[Ref. 1:p. 42] In 1938, a blue ribbon commission appointed by the U.S. Maritime Commission pursuant to the Merchant Marine Act of 1936 noted that it was possible that the cost difference might exceed 50 percent. With this in mind the Commission concluded that:

A less expensive remedy would be to permit construction abroad in all cases in which the foreign costs are less than half the costs here, registry here being required as soon as practicable, and the vessel so built and registered being eligible for an operating-differential subsidy as if built here. Domestic shipping, however, should be protected from the competition of vessels so registered to the full extent that is protected from the competition of vessels receiving a construction differential subsidy.

This suggestion the Commission recommends. It would, where applicable, relieve the Government from the necessity of providing cash either as a loan or as a contribution (except as to national defense features). It would prevent the development and maintenance

of our merchant marine being checked by the rise of shipbuilding costs here to levels more than twice as high as those abroad.[Ref. 12:p. 64]

Overall, the Merchant Marine Act of 1936 made shipyard investment an attractive option for private capital. At that time, the foreign trade fleet was approaching statutory obsolescence (the Merchant Marine Act of 1936 required subsidized operators to replace vessels over 20 years old.) It was estimated that about 90 percent of the merchant fleet would need replacement by 1942.[Ref. 1:p. 37]

In 1938, the Merchant Marine Commission recommended a 50 ship per year building program. After war broke out in Europe in 1939, it became apparent that the United States could be involved. In 1941, President Roosevelt announced an emergency 200 ship per year building program. Prior to Pearl Harbor, the figure was increased to 300 ships per year. All this construction was in addition to the large Naval construction programs that were taking place at the time. It is important to note that major construction had been initiated in 1938 and that the shipbuilding base was being put in place prior to the increased emergency shipbuilding order from President Roosevelt.[Ref. 1:p. 38]

Pre-World War II, the Merchant Marine fleet consisted of general cargo vessels. After the war, needs changed to a demand for specialized carriers, such as bulk carriers, large

tankers and other specialized ships. In 1952 and 1970, legislation was changed to include the construction differential subsidy option to operators of specialized vessels.[Ref. 13:p. 124]

### C. INDIRECT AID TO SHIPBUILDING

Several indirect shipbuilding support arrangements have been enacted over the history of our country. Table 3.2 summarizes the major legislative action enacted.

**TABLE 3.2 LEGISLATION INDIRECTLY AIDING U.S. SHIPYARDS**

<i>Legislation</i>	<i>Legislative Provisions</i>
Acts for 1792, 1813, 1818	a. Federal Government provided a bounty for construction of fishing vessels. b. Subsidies granted to cod fishing fleet.
Act of 3 March 1845	Mail subsidies provided to selected shipping firms to encourage an American flag presence on certain routes. Ships were to be American-built. The subsidy was canceled in 1858.
Act of 23 December 1852	Foreign vessels wrecked on U.S. coasts could be admitted to U.S. registry if repairs (made in United States) were equal to three times the salvage value of the vessel. Act amended in 1894 to allow registry of foreign vessels wrecked anywhere on same conditions.
Act of 28 May 1865	Mail subsidies reinstated.
Act of 18 July 1866	Shipowners who transferred their vessels to foreign flag during Civil War could not re-register them under U.S. flag.

**TABLE 3.2    LEGISLATION INDIRECTLY AIDING U.S. SHIPYARDS**

<i>Legislation</i>	<i>Legislative Provisions</i>
Ocean Mail Act of 1891	Comprehensive system of subsidized mail services authorized. Ships on these routes were to be U.S.-built.
Act of 28 April 1904 (Military Transportation Act)	Military cargo reserved to U.S.-flag ships and , by definition, to U.S.-built vessels.
Merchant Marine Act of 1920	Section 11 established a construction loan fund of \$25 million. It was to be used to "aid in the construction of vessels of the best and most suitable types for U.S. foreign commerce." Funds were available to ship operator on favorable terms.
Merchant Marine Act of 1928	a. Construction loan fund increased to \$125 million. b. Mail subsidies made dependent on replacement (in U.S. shipyards) of obsolete vessels.
Merchant Marine Act of 1936	Vessel operator receiving an operating differential subsidy required to build ships in the United States.
Ship Sales Act of 1946	Surplus war-built ships sold to U.S. firms on a preferred basis and on favorable terms. Modification to peacetime configurations, repairs, and overhaul of these vessels done in U.S. yards. (See Tariff Act of 1930 and Merchant Marine Act of 1920, Table 3.1)
Cargo Preference Act of 1954	Fifty percent of Government-sponsored cargoes must move in U.S.-flag ships, if available. The Act induced a demand for U.S.-built ships. Shipments under the Agricultural Trade and Development Act of 1954 were also included in above described cargo-sharing arrangement.

**TABLE 3.2 LEGISLATION INDIRECTLY AIDING U.S. SHIPYARDS**

<i>Legislation</i>	<i>Legislative Provisions</i>
Act of 7 July 1960	Government share of construction cost raised to 55 percent for a two-year period. Purpose was to encourage replacement of U.S.-flag tonnage in U.S. shipyards.
Act of 13 September 1961	Act of 7 July amended to include reconstruction of ships at 55 percent subsidy level.
Trans-Alaska Pipeline Act of 1973	Prohibited export of domestically produced crude oil unless the president certified that such would not imperil domestic supplies and was in national interest. Note that Section 27 of Merchant Marine Act of 1920 (Jones Act) restricts cargo movement between U.S. ports to U.S.-flag/built ships.
FY 1975 Defense Appropriations Authorization Act (Title VIII)	a. As a matter of national policy legislation required that "major combatant vessels for strike forces of the U.S. Navy be nuclear powered." Given the secrecy constraint on U.S. nuclear ship technology, the amendment effectively limited this work to U.S. yards.
Export Administration Act of 1979	Restricted the export of Alaska North Slope oil until 30 September 1983. Note: Congress granted two year extension in 1983, i.e., until 1985.
Shipping Act of 1984	This legislation "deregulated" to a certain extent American-flag liner companies. To the extent these companies were better able to compete in international ocean shipping, U.S. shipyards indirectly benefitted.
House-Joint Resolution 648 of Continuing Resolution Appropriations for FY 1985	Extended prohibition against Department of Defense purchasing any military vessel, not just Naval vessels, from a foreign shipyard.

**TABLE 3.2    LEGISLATION INDIRECTLY AIDING U.S. SHIPYARDS**

<i>Legislation</i>	<i>Legislative Provisions</i>
An Act to Reauthorize the Export Administration Act of 1979 (Public Law 99-64, 12 July 1985)	Restricted the export of Alaska North Slope crude oil. Legislation required a review of the export restriction provisions of the Act along with a review of other Federal and State taxing and leasing policies.

Source: Whitehurst, Clinton H., *The U.S. Shipbuilding Industry: Past Present and Future*, Naval Institute Press, Annapolis, MD p.39-41.

### **1.    Cargo Reservation**

Indirect support consists of various cargo reservation programs, mainly the 1904 Military Transportation Act, the 1954 Cargo Preference Act, the Agricultural Trade Development and Assistance Act of 1954 (Title II), and to a lesser extent, Public Resolution Number 17 (March 1934), which provides that where Government loans are made to foster exports, the exports must be carried in U.S.-flag ships.[Ref. 1:p. 42] It is known that there is an increased cost in using U.S. flag vessels but the increased cost is widely debatable. In a 1978 Report to Congress, the U.S. GAO cited a study that estimated the cost to exceed \$5 billion over a 20 year period.[Ref. 14:p. 6]

These cargo preference laws generate significant revenues for U.S. flag ship operators (\$619 million in 1982) and provide indirect support for U.S. shipbuilding industry.[Ref. 2:p.18]

### **2.    Merchant Marine Act of 1936**

The Federal Ship Financing Guarantee Program (Title

XI), of the Merchant Marine Act of 1936, was noted as being one of the most successful indirect approaches used to aid shipyards. The program insured the full payment to a private lender should the vessel owner be in default.

In 1983, 254 deep-draft vessels were covered to the extent of \$4.7 billion. When other smaller eligible builds are included (tugs, drilling rigs, etc.) the vessel total jumps to 6,491 with a commitment of \$7.8 billion.<sup>7</sup>[Ref. 2:p. 17]

### **3. Tax Policies**

Investment tax credits are available for shipyards. These amount to about \$150 million a year, according to the Congressional Budget Office. Additionally, almost \$300 million in taxes have been deferred in recent years by shipbuilders who make deposits into a Capital Construction Fund, or by operators who deposit capital gains from the sale of vessels into a Construction Reserve Fund.[Ref. 2:p. 18] Both funds are destined to be used later to purchase new U.S. built ships.

### **4. PUBLIC LAW 97-252**

Historically, American Naval vessels have been built in U.S. shipyards; and since 1967, all new construction has been done by private yards. Over the years with the variety

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<sup>7</sup> In 1984 and 1985, a series of defaults depleted the fund, which to that point had been self-sustaining. No funds have been available since fiscal year 1987.

of contracts tried, and severe problems with cost overruns, an adversarial relationship developed between private yards and the Navy.[Ref. 1:p. 45]

In 1974, in the House of Representatives hearings, arguments were heard to return some of the Naval work back to "Public" Naval Shipyards. In 1980, there was even serious discussion to have the Naval ships built by foreign shipyards.[Ref. 1:p. 42] This last option was removed in 1982, when Congress passed Public Law 97-252, which established that no Naval vessel or major component may be constructed in a foreign shipyard unless it is authorized by the President in the interest of national security.[Ref. 1:p 42] The law still stands today and has had major impact on the survival of this country's numerous private shipyards.

#### **D. PROPOSED LEGISLATIVE REMEDIES**

With the long history of legislative action on behalf of the shipbuilding industry, it would seem that some firm conclusions could be reached for a correct support scheme. The problem is that the environment is constantly changing and new economic competition is continually evolving.

The U.S. Government has the responsibility to ensure that there is a sufficient shipbuilding base on which to build in time of war or a national emergency. Hinged on this

philosophy is the need to protect and maintain the shipyard industrial base. Table 3.3 addresses some of the proposed laws drafted to protect the shipyard industrial base.

**TABLE 3.3 LEGISLATIVE AND INDIVIDUAL PROPOSALS IN  
SUPPORT OF U.S. SHIPYARDS 1983-1992**

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*Direct Support of  
Shipyards*

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**Maritime Redevelopment  
Bank Act**

a. Establish a Maritime Redevelopment Bank to finance, co-finance refinance maritime projects through loan guarantees. Loans to be secured by ship mortgage or other firm assets. Legislation would restructure Title XI of the Merchant Marine Act of 1936 and encourage series production of commercial vessels.

b. Various proposals made to increase the share of Naval repair and alteration work awarded to private shipyards. Proposals range from mandating 40 to 50 percent of this work to private yards.

c. Investigate the possibility of having U.S. shipyards export diesel-electric submarines to allied Naval forces. Report on feasibility of this option requested by Senate Armed Services Committee.<sup>8</sup>

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<sup>8</sup> On 23 May 1985 the Department of Defense recommended against the option on the grounds of "unacceptable loss of...irreplaceable submarine technology." Congress concurred with DOD's recommendations and retracted the recommendation.

**TABLE 3.3 LEGISLATIVE AND INDIVIDUAL PROPOSALS IN  
SUPPORT OF U.S. SHIPYARDS 1983-1992**

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*Direct Support of  
Shipyards*

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d. Allow American Flag operators who build two ships in U.S. yards for every three ships built in foreign yards. These foreign-built ships would be considered "U.S.-built" with respect to Title XI, operating differential subsidies, and cargo preference laws.

e. Fund a grant program to upgrade propulsion machinery of U.S.-flag vessels in U.S. yards. Requirement is that fuel savings be on the order of 25 percent and that engine-rooms be automated.

f. Department of Defense to finance construction in U.S. shipyards of military useful vessels. Vessels built in series would be sold or chartered to U.S. citizens. A variant of this proposal would make funding a Department of Transportation responsibility.<sup>9</sup>

g. Authorize \$250 million in construction subsidy monies. Allow construction differential subsidies to exceed 50 percent.

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<sup>9</sup> Numerous suggestions have been made both in and outside of Government that U.S. shipbuilding costs can be significantly reduced if a series of at least 10 ships are built in a single shipyard.

**TABLE 3.3 LEGISLATIVE AND INDIVIDUAL PROPOSALS IN  
SUPPORT OF U.S. SHIPYARDS 1983-1992**

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*Direct Support of  
Shipyards*

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h. Authorize \$300 million in construction subsidies for FY 1986, raise permissible CDS payment to 60 percent, and increase Federal Ship Mortgage Guaranty from \$12 billion to \$15 billion.

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*Indirect Support of Shipyards*

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**Competitive Shipping and  
Shipbuilding Act**

a. Would require that exporters and importers of dry cargo and liquid bulk commodities increase use of U.S.-built, U.S.-flag ships. Percent of this trade going to U.S. ships would begin at 5 percent and increase to 20 percent.

b. Extend capital construction fund (CCF) to include domestic trade vessels. CCF now only allows U.S. foreign-trade operators to deposit monies into tax-deferred accounts for purpose of ultimate construction/reconstructing tonnage in U.S. shipyards.

**TABLE 3.3 LEGISLATIVE AND INDIVIDUAL PROPOSALS IN  
SUPPORT OF U.S. SHIPYARDS 1983-1992**

**Direct Support of  
Shipyards**

	<p>c. Allow a tax credit, similar to present 10 percent investment tax credit, for work performed in U.S. shipyards when both labor and management reduce construction costs; e.g. if management reduces profits by 15 percent and labor reduces labor costs by 15 percent, then a full tax credit of 15 percent would be given. Estimated total savings in U.S. building costs is 30 percent.</p>
Conference Report, House Joint Resolution 465, Continuing Resolution for FY 1986	<p>a. Established "a revolving Mariner type Fund for the construction and lease of cargo vessels configured for the military sealift mission."</p> <p>b. Start-up money for the fund would come from \$852 million of unused Naval appropriations. While the Conference Report set aside the \$852 million, it cannot be spent until further enabling legislation is passed by Congress.</p>
June 1989, Shipbuilders Council of America file petition under Sec. 301 of Amended U.S. Trade Act of 1974	<p>Petition to try to make the U.S. Government take action to end shipbuilding subsidies in Japan, South Korea, Germany and Norway.</p>
Shipbuilding Trade Reform Act of 1992, (Gibbons Bill) Amendment of the Tariff Act of 1930.	<p>It requires shipowners of subsidized foreign built vessels to pay a Tariff upon entry into U.S. ports.</p>

Source: Whitehurst, Clinton H., *The U.S. Shipbuilding Industry: Past Present and Future*, Naval Institute Press, Annapolis, MD p. 44-46.

### **The Shipbuilding Trade Reform Act of 1992 (H.R.2056)**

This legislation is designed to counter foreign government subsidy practices in the future construction and repair of commercial ships. It does so by making the principles of existing U.S. unfair trade laws, which deal with subsidized and dumped imports, available to the shipbuilding industry. U.S. industries that produce all other means of transportation such as airplanes, trains, and trucks have coverage under such law, while the ship-building industry does not.

It grandfathers the existing ships built with subsidies and will only apply to ships currently being built that the Department of Commerce identifies as receiving subsidies.

The law would amend the Tariff Act of 1930. It would require that subsidy information regarding vessels be provided upon entry within customs collection districts. It would also provide effective trade remedies under the anti-dumping duty laws against foreign-built ships that are subsidized or dumped. Considering the above, subsidized shipowners would be levied a tax upon entry into any U.S. port.[Ref. 15:p. 47]

### **E. U.S. POLICY DECISIONS**

Some of the U.S. Government's policies and practices in the past have unintentionally reduced the shipbuilding industry's ability to compete internationally.[Ref. 1:p. 57] Other governments have assisted their shipbuilding industries through coordination in development, marketing and pricing

approaches and have heavily subsidized them to gain market share.[Ref. 3:p. 21]

The elimination of the U.S. construction differential subsidy in 1981, by the Reagan administration, was an attempt to place the U.S. shipyards on a "level playing field" by eliminating subsidies. This action, coupled with other countries continuing to heavily subsidize their shipyards, lead to the virtual collapse of commercial shipbuilding in the United States. Shipowners went to the cheaper foreign subsidized yards for new vessels.[Ref. 3:p. 7]

The Shipbuilding Trade Reform Act of 1992 will help try to bring other countries back to the so-called "level playing field". Attempts have been made in the past to get all the major shipbuilding nations involved in an multi-nation consortium called the Organization for Economic Cooperation and Development (OECD)<sup>10</sup>.

The Shipbuilders Council of America filed a petition in June 1989, under Section 301 of the Amended U.S. Trade Act of 1974, requesting U.S. Government action to end shipbuilding subsidies in Japan, South Korea, Germany, and Norway. Numerous meetings and discussions have taken place between the U.S. Government and other members of the OECD since 1989. As

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<sup>10</sup> OECD is an organization of economically developed industrialized western nations.

of September 1992 there has been no formidable progress made on the subsidy problem.[Ref. 6:p. 39]

#### **F. SUMMARY**

This chapter identified key pieces of legislation designed to affect the shipbuilding and ship repair facilities. Few firm conclusions can be drawn about how best, through legislation, to support high-cost U.S. shipyard industry. However, there are some general notions that would apply.

It is the responsibility of the Government to ensure that there is a sufficient shipbuilding base on which to build in time of war or national emergency. This means putting priority first to preserving the industry, before regulating to achieve a competitive or efficient industry.

In the early 1980s the Reagan Administration eliminated Construction Differential Subsidies (CDS), which was disastrous to the already hurting U.S. commercial shipbuilding market. The subsidies were canceled because the administration wanted the U.S. to take the lead in eliminating subsidies in the world. The intention may have been good but no U.S. policy was established to encourage other countries to eliminate subsidies.

The OECD has been unsuccessful in getting agreement on the elimination of subsidies throughout the world members. The "Shipbuilding Trade Act of 1992", if approved, will tax foreign vessels built with subsidies as they enter U.S. ports.

This will go a long way in trying to create the "level playing field" for U.S. shipbuilders to compete for commercial work. The only possible detriment of enactment of this legislation may be the elimination of the Jones Act. The Jones Act allows only U.S.-built U.S.-registered ships to operate between U.S. ports. It has protected many commercial cruise ship yards and inter-coastal shipyards from foreign competition.

Legislation not directly affecting the shipbuilding industry but may have a positive impact is the establishment of environmental laws involving ships operation in U.S. waters. One issue that will be addressed in subsequent chapters is the requirement for double-hull tankers by 1995.

The next chapter will analyze the future shipbuilding programs of the Navy and draw some deductions on how this will effect the shipyard and the industrial base.

#### IV. ANALYSIS OF SHIPYARD SURVIVAL

##### A. GENERAL

The U.S. policy for a mobilization base for shipyards is stated in the National Security Decision Directive 47 (NSDD-47). It was developed on 22 July 1982, and states that the "United States is to have an emergency mobilization capability that will insure that Government, at all levels, in partnership with the private sector and the American people, can respond decisively and effectively to any major national emergency." [Ref. 16]

DOD's responsibility is to develop mobilization planning in order to provide efficient, competitive peacetime production, have the capability to accelerate output through surge capability, prepare to indefinitely sustain combat forces and reduce the dependency on imported goods. [Ref. 1:p. 215]

One of the ways DOD evaluates the shipyard industrial base capabilities is through a survey conducted by the Maritime Administration (MarAd). MarAd conducts a survey annually of the shipbuilding and ship repair industry. The study is done to fulfill requirements established in the Merchant Marine Act of 1936, which requires MarAd to conduct an investigation of the industrial base. It obtains information from the

shipbuilding and ship repair industries to be used primarily in determining if an adequate mobilization base exists for national defense and for use in a national emergency.[Ref. 17:p. 2]

The data accumulated by the surveys are input into the Shipyard Evaluation Analysis System Model (SEAS), a quantitative assessment of the Nation's ship construction and ship repair capability. The capability is periodically compared with the Department of Defense contingency requirements to assess the adequacy of the shipbuilding mobilization base, including ship repair and reactivation of the Maritime Administration reserve fleet and the U.S. Navy reserve fleet.[Ref. 17:p. 2]

MarAd distributes the surveys each spring to ship repair and shipbuilding yards around the country (in 1991 approximately 350 surveys were sent) and publishes consolidated results in January of the next year. MarAd and the NAVSEA, Industrial Planning Division, evaluate the results for future maritime requirements. They provide a data base that is used to evaluate the feasibility of proposed shipbuilding programs. Internal determinations are made regarding which existing shipyards might construct proposed ships consistent with ship size, and the required delivery date. Requirements for new facilities are also investigated with respect to the demands for proposed shipbuilding programs. NAVSEA and MarAd also use the information generated

to respond to inquiries from Congress, Department of Defense (DOD), Office of Management and Budget (OMB), and other Government agencies.[Ref. 17:p. 2]

The statistical information used in the following sections was developed through the use of the 1991 and earlier MarAd surveys. The surveys were used to develop evaluations of Navy programs, Naval shipyards and the private shipyard base.

#### **B. PRIVATE SHIPYARDS**

There are a total of seventeen privately owned shipyards considered by the U.S. Department of Transportation, Maritime Administration, as being major shipyards capable of large ship construction (Ref. Table 4.1).

MarAd considers General Dynamics Corporations's Electric Boat Division a major shipyard, but because it is engaged exclusively in construction of submarines for the Navy, it is not included in the list of major yards.

The Maritime Administration and the Navy consider a major shipbuilding and repair facility as one that is "open and has the capability to construct, drydock, and conduct topside repair on vessels with a minimum length of 400 feet, provided that water depth in the channel to the facility is at least 12 feet." [Ref. 17:p. 4]

**TABLE 4.1. MAJOR SHIPBUILDING FACILITIES IDENTIFIED BY MarAd**

<b>MAJOR SHIPBUILDING FACILITIES</b>	<b>LOCATION</b>
1. Alabama Shipyard, Inc.	Mobile, Alabama
2. Avondale Industries, Inc.-Avondale Shipyards Division	New Orleans, Louisiana
3. Bath Iron Works Corporation	Bath, Maine
4. BethShip Sparrows Point Yard	Baltimore, Maryland
5. Fraser Shipyards, Inc.	Superior, Wisconsin
6. Halter Marine, Inc., Moss Point Division	Moss Point, Mississippi
7. Ingalls Shipbuilding, Inc.	Pascagoula, Mississippi
8. Marinette Marine Corp.	Marinette, Wisconsin
9. Merce Industries, Inc.	Toledo, Ohio
10. National Steel and Shipbuilding Company (NASSCO)	San Diego, California
11. Newport News Shipbuilding	Newport News, Virginia
12. Peterson Builders Incorporated	Sturgen Bay, Wisconsin
13. Portland Ship Repair Yard	Portland, Oregon
14. Tacoma Boatbuilding Company	Tacoma, Washington
15. Tampa Shipyards, Inc.	Tampa, Florida
16. Todd Pacific Shipyards Corporation-Seattle Division	Seattle, Washington
17. Trinity Industries, Inc-Beaumont Yard	Beaumont, Texas

Source: Office of Ship Construction, Division of Production, Report on Survey of U.S. Shipbuilding and Repair Facilities 1991, U.S. Department of Transportation, Maritime Administration, December 1991.

The Navy and the Maritime Administration have also identified an active shipbuilding base. It is made up of 16 "privately owned U.S. shipyards which are open and currently engaged in or seeking contracts for the construction of major oceangoing or Great Lakes ships 1,000 gross tons and over." [Ref. 16:p. 41] Table 4.2 below shows the list of shipyards considered part of the active shipbuilding industrial base.

**TABLE 4.2. ACTIVE U.S. SHIPBUILDING INDUSTRIAL BASE**

	<b>ACTIVE SHIPBUILDING BASE</b>	<b>LOCATION</b>	<b>EMPLOYMENT</b>
1.	Alabama Shipyard, Inc.	Mobile, Alabama	191
2.	Avondale Industries, Inc.- Avondale Shipyards Division	New Orleans, Louisiana	7,300
3.	Bath Iron Works Corporation	Bath, Maine	10,805
4.	BethShip Sparrows Point Yard	Baltimore, Maryland	539
5.	Ingalls Shipbuilding, Inc.	Pascagoula, Mississippi	15,531
6.	Marinette Marine Corp.	Marinette, Wisconsin	218
7.	Merce Industries, Inc.	Toledo, Ohio	60
8.	National Steel and Shipbuilding Company (NASSCO)	San Diego, California	3,931
9.	Norfolk Shipbuilding and Drydock Corp.	Norfolk, Virginia	2,879
10.	Newport News Shipbuilding	Newport News, Virginia	27,000

**TABLE 4.2. ACTIVE U.S. SHIPBUILDING INDUSTRIAL BASE**

	<b>ACTIVE SHIPBUILDING BASE</b>	<b>LOCATION</b>	<b>EMPLOYMENT</b>
11.	Peterson Builders Incorporated	Sturgen Bay, Wisconsin	990
12.	General Dynamics, Electric Boat Div.	Groton, Connecticut	18,001
13.	Tacoma Boatbuilding Company	Tacoma, Washington	88
14.	Tampa Shipyards, Inc.	Tampa, Florida	1,142
15.	Todd Pacific Shipyards Corporation-Seattle Division	Seattle, Washington	1,278
16.	Trinity Industries, Inc-Beaumont Yard	Beaumont, Texas	95

Source: Office of Ship Construction, Division of Production,  
Report on Survey of U.S. Shipbuilding and Repair Facilities  
1991, U.S. Department of Transportation, Maritime  
Administration, December 1991.

In 1991, the active shipbuilding base employed 73 percent of the U.S. shipbuilding and repair industry's total work force, as reported by the Bureau of Labor Statistics. In addition, 94 percent of the production workers at the 16 shipyards, were employed in the construction or repair of Navy or Coast Guard ships.[Ref. 17:p. 41]

At the end of 1991, eight of the sixteen shipyards were engaged in construction and/or conversion of major combatant and auxiliary ships for the Navy. Table 4.3. shows the number of ships by class under construction at private yards in the beginning of 1991. Two of the yards were primarily involved

with ship construction work provided by the Navy's T-ship program. Eight of the yards had only repair and overhaul work, smaller Navy vessel orders, and non-ship construction work.[Ref. 17:p. 41]

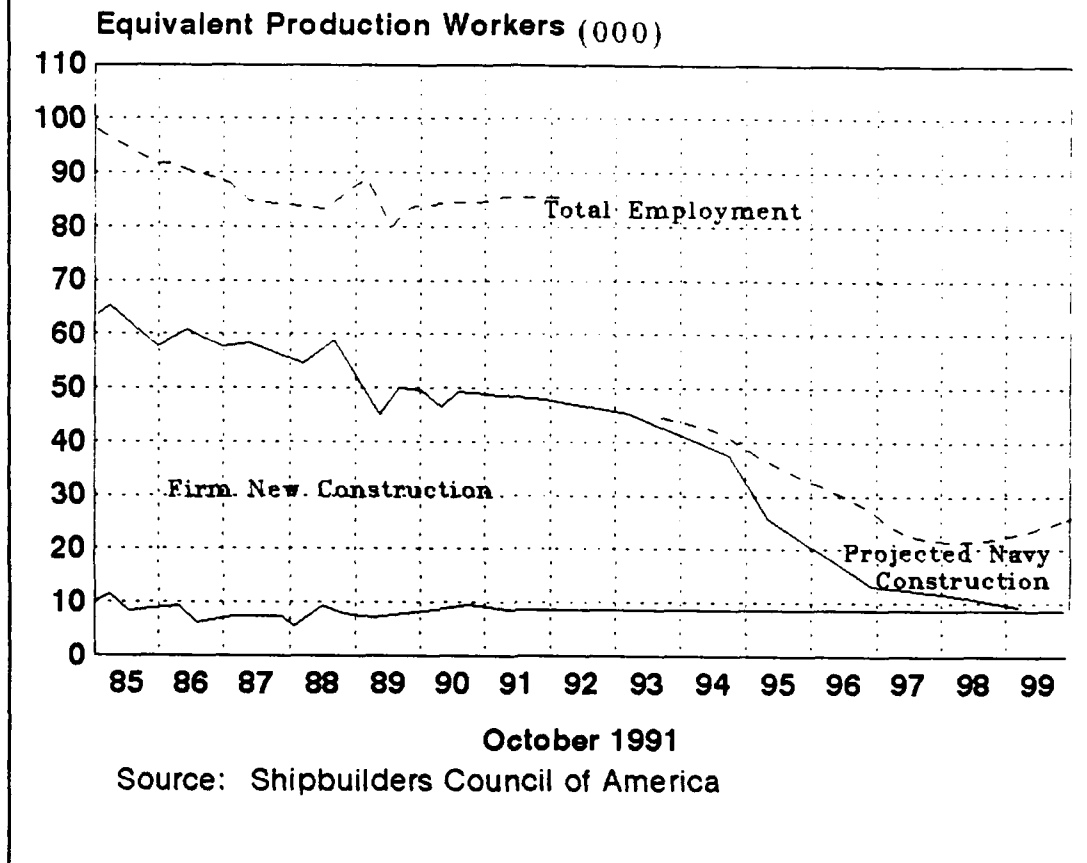
**TABLE 4.3. NAVY VESSELS CURRENTLY UNDER CONSTRUCTION AT PRIVATE SHIPYARDS JANUARY 1991**

<i>TYPE OF SHIP</i>	<i>TYPE</i>	<i>TOTAL</i>
CVN	AIRCRAFT CARRIER (NUCLEAR)	3
SSN-688	ATTACK SUBMARINE (NUCLEAR)	15
SSBN	BALLISTIC MISSILE SUBMARINE (NUCLEAR)	6
SSN-21	ATTACK SUBMARINE (NUCLEAR)	1
DDG-51	GUIDED MISSILE DESTROYER	16
CG	GUIDED MISSILE CRUISER	7
LHD	AMPHIBIOUS ASSAULT SHIP	4
LSD	LANDING SHIP DOCK	4
T-AGOS	OCEAN SURVEILLANCE SHIP (SWATH)	4
T-AGS	DEEP OCEAN SURVEY SHIP	4
MCM	MINE COUNTERMEASURES SHIP	6
MHC	COASTAL MINE HUNTER	7
AOE	FAST COMBAT SUPPORT SHIP	3
T-AO	FLEET OILER	<u>9</u>
TOTAL		89

Source: Shipbuilders Council of America, *Presentation to the DoD Economic Conversion Commission*, September 1992.

Employment projections for production workers are shown in Figure 5 below. These data are generated by overlaying Navy projected six-year shipbuilding and conversion programs onto the estimated work force required to complete them.

## Projected Shipbuilding Industry Workload Active Shipbuilding Base Summation



**Figure 5** Projected Shipbuilding Industry Workload

An independent study conducted in 1991, by several senior military and civilian students of the Industrial College of the Armed Forces National Defense University, analyzed the effects of the declining shipyard base.[Ref. 2] This study found that the industry is able to meet current national security requirements for shipbuilding. The students looked

at the current Naval requirements, statistics of shipyard capabilities, toured several facilities and evaluated the shipyard base with those requirements. Although the conclusion was positive for fulfilling current and near-term shipyard requirements, concern was addressed regarding long term shipyard survival. They stated that:

The shipbuilding industry is in a state rapid decline and that if left unchecked, the decline will erode the shipbuilding industrial base and its support network of subcontractors and suppliers.[Ref. 2:p. 4]

One of the conclusions they developed was the need for a cohesive national industrial policy which includes support to preserving and promoting the U.S. shipbuilding industry.[Ref. 2:p. 24]

Private shipyards do not have such a bleak future if they can make changes to their capital investment strategies and compete in commercial shipbuilding. According to the Shipbuilders Council of America (SCA), U.S. shipbuilders must build 30-50 commercial ships per year to support the present physical capacity given the current military workload through 1997.[Ref. 3:p. 46] There are optimistic forecasts for the increased world demand for new commercial shipping in the later half of the 1990s. This optimism is caused by the need to replace older ships because of age and condition and also meet the new U.S. Pollution Act of 1990. The Act mandates that tankers in U.S. waters must be outfitted with double

hulls on a phased schedule starting in 1995.[Ref. 3:p. 46] In addition, several organizations are starting modernization and improvement programs. The National Oceanic and Atmospheric Administration (NOAA) has also begun a significant vessel acquisition program. Congress appropriated approximately \$33.2 million in FY 92 to upgrade NOAA's 22-ship fleet.[Ref. 4:p.26]

There is a large number of conversions being proposed for the Maritime Administration's Ready Reserve Force (RRF) and a larger force of pre-positioning assets. The Mobility Requirements Study (MRS)<sup>11</sup> asserts:

There are threats to U.S. interests in the world that will require fast, effective fighting forces capable of fulfilling diverse missions....Our forward presence is declining, the number of potential crisis flash-points is increasing and future coalitions (of allies) could be ad hoc. To support national interests, deployment capability must increase through expanded investment in sealift, pre-positioning, and transportation infrastructure in the U.S.[Ref. 18:p. 23]

The MRS urged that DOD acquire through new construction and conversion "additional sealift capacity equal to 20 large (380,000 sq. ft. total capacity and 300,000 sq. ft. capacity for prepositioning configuration) medium-speed (24-knot

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<sup>11</sup> DOD study, parts of which are classified, that Congress asked for to determine the types of ships desirable for sealift services.

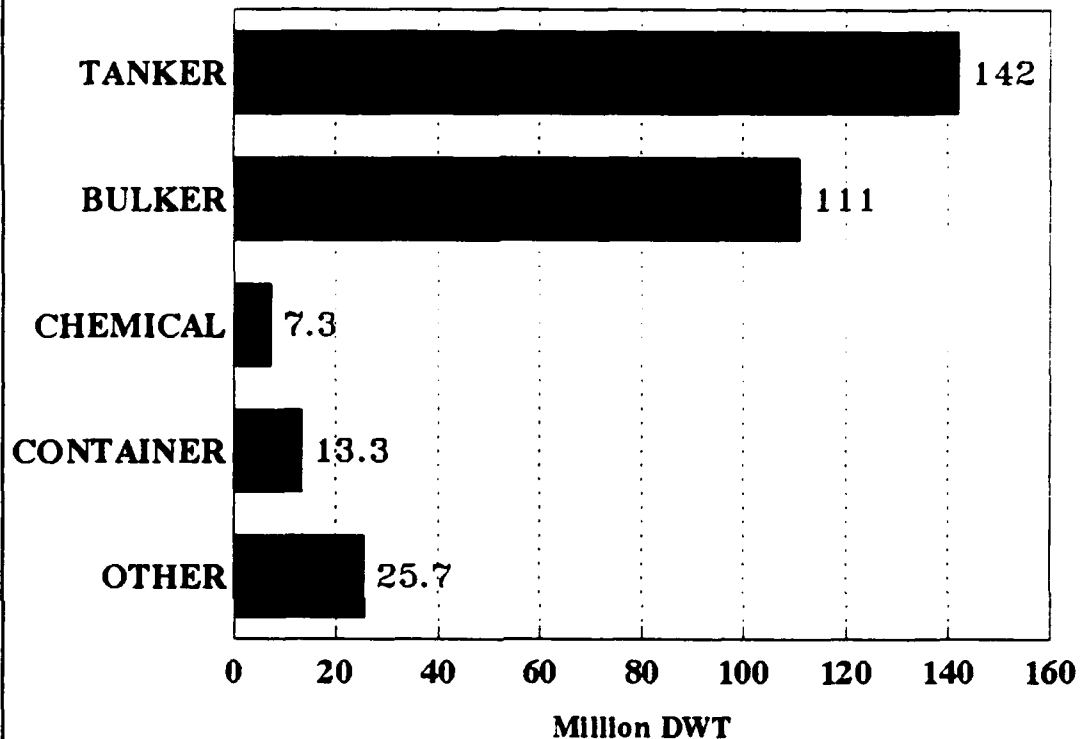
sustained) RO/RO ships (LMSRs)."[Ref. 4:p. 22-23] The ships would be provided for rapid deployment of heavy Army divisions and maintained in high readiness. They also recommended expanding the RRF by FY 99, from 96 current ships to 142 and also increasing the readiness of the fleet.[Ref. 18:p. 23] This program, a fallout from the lessons learned in Operation Desert Storm, could provide a large pool of conversion work to both private and public yards.

The SCA identified a large volume of commercial ship construction needed to keep pace with the aging commercial fleet. Figure 6 shows the projected tonnage requirements from 1990 to the year 2000.

The U.S. is approaching the best opportunity to compete in the commercial shipbuilding market since the elimination of the Construction Differential Subsidy program in 1981.[Ref. 2:p. 15] New world construction requirements anticipated in the mid-1990s will give the U.S. an opportunity to become a viable commercial supplier again. U.S. labor rates are becoming more competitive also and stand ninth among shipbuilding nations, behind Germany, Japan the Netherlands, and others. Korea, which had enjoyed rates one-third those paid in Northern Europe and the U.S., faces rapid inflation, while closing the labor gap.[Ref. 2:p. 15]

Worldwide subsidies are declining. Countries that subsidized heavily in the 1980s have learned that they forced world ship prices artificially low and in some cases below

### ISL-Bremen Estimate of Newbuilding Demand, 1990-2000



Source: Shipbuilders Council of America

**Figure 6** Estimate of New Shipbuilding Demand for 1990-2000

construction costs. In Europe, subsidies are down to 14.9 percent from a previous 20 percent. Germany has frozen subsidies to free up cash needed for unification financing. Germany's influence in the European Community (EC) is likely to influence the further lowering of Subsidies in Europe[Ref.

2:p. 15] Japan moved to financing R&D support and de-emphasized direct subsidies.[Ref. 3:p. 38]

Although many countries are moving to eliminate subsidy practices, they remain a very political issue. Recent riots by the farmers in France concerning grain subsidies are a good example. The French farmers don't want to eliminate or cut subsidies because it will impact their income. Similar problems could occur if shipbuilding subsidies are eliminated completely in Japan, Korea, Germany and many other countries.

The elimination of foreign subsidy programs and dumping practices is essential for the U.S. yards to compete in the world market. The success of the Organization for Economic Cooperation and Development (OECD) and the possible enforcement of the Shipbuilding Trade Reform Act of 1992, could go a long way in achieving competitive equality.

The next section will focus on public vs. private competition and discuss why the Navy has a shipyard base.

### **C. PUBLIC NAVAL SHIPYARDS**

Originally, eleven Naval shipyards operated in the 1960s. During the late 1960s and 1970s, three were closed (San Francisco, New York and Boston shipyards) as a result of base closures. Currently, eight Navy shipyards exist "to provide immediate responsive ship repair support to the current operating combatant fleet, and to be the center from which necessary wartime shipbuilding and repair capability can be

mobilized."[Ref. 1:p. 142] Four are strategically located on the east coast (Philadelphia, PA; Portsmouth, NH; Norfolk, VA; and Charleston, SC ), and four on the west coast including Hawaii (Mare Island, CA; Puget Sound, WA; and Long Beach, CA; and Pearl Harbor, HI).[Ref. 1:p. 143] The Philadelphia shipyard has been nominated for closure by the Base Closure Commission, but it is unsure when it will close since political fighting continues to keep it open.[Ref. 1:p. 221]

Naval shipyards work with the Naval base organization in getting the required security, administrative support and training required in operating a shipyard. They are part of the operational Navy in that they provide emergent support to commands afloat. Very experienced "tiger teams"<sup>12</sup>, from the shipyards, have been flown around the world to meet the Navy's emergency repair requirements. They receive the majority of combatant ship overhaul and repair work because of unique capabilities for fleet support.[Ref. 1:p. 204] The Navy shipyards official mission statement is:

To provide logistic support for assigned ships and service craft; to perform authorized work in connection with construction, conversion, overhaul, repair, alteration, drydocking, and outfitting of ships and craft, as assigned; to perform manufacturing, research, development, and test work as assigned; and to provide services and material to other activities and units as directed by competent authority.[Ref. 1:p. 75]

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<sup>12</sup> Experienced and specialized workers put together to provide mobile worldwide ship repair and maintenance assistance.

At the conclusion of World War II, certain functions and facilities that were formerly the responsibility of the Naval yards were reorganized and disbursed to Naval Supply Centers, Naval Ammunition Depots, etc. These changes in organization and functions made the Naval shipyard's role more questionable to those who saw the private sector as better able to fulfill the construction, conversion, and repair work that had been done in the Naval shipyards.[Ref. 1:p. 77]

The Navy shipyards are unique and are responsive to the fleet needs. Their capability has taken decades to build. Market trends and flow of mission have not wavered from the ultimate goal of supporting the Fleet. The economic forces of the shipbuilding industry drive the type and level of work the commercial sector is willing to tackle. The Navy Shipyards do not have that luxury because of the need to maintain certain fleet capabilities. A good example of market shifts on the commercial side is the capabilities of nuclear repair and refueling.

There are currently two private yards that are capable of refueling, overhaul and repair of nuclear-powered ships. Newport News Shipbuilding and Drydock Company and Electric Boat Division of General Dynamics are the only two yards authorized to work on nuclear ships.[Ref. 1:p. 83] The Electric Boat Division has not done overhaul or refueling work since the mid-1970s, because it has been totally consumed with

contracted new construction. Similarly, Ingalls built and overhauled nuclear submarines at one time, but is now totally committed to conventionally powered ships. Only Newport News has retained the capability to accomplish nuclear work in both construction and repair.[Ref. 1:p. 83]

Currently, six Navy shipyards are capable of overhaul, repair, conversion and refueling of nuclear ships.[Ref. 1:p. 83] This capability has taken years to develop, and was not been developed by the economic forces that drove private industry. It was done based on the national security requirement to maintain the unique repair capability. While it might be nice to have free and open competition between public and private shipyards, the country can not afford to lose its capabilities to market trends or political climates.[Ref. 1:p. 220]

It is widely debated in a downsizing environment, why it is necessary to maintain the eight Naval shipyards when the Navy is getting smaller and the global threat is substantially reduced. The challenge of the Naval shipyards as a group, must be to establish a justifiable reputation for leadership in productivity, quality and cost.

As the industrial base gets smaller, the allocation of conversion, alteration, and repair work between public and private shipyards will be intensely challenged by Congressional committees and industry trade organizations like the Shipbuilders Council of America. The split for

private/public work is usually around 30 percent for private yards and 70 percent going to public Navy shipyards.[Ref. 1:p. 83] No significant change in the mix has occurred in the last twelve years. As the amount of new construction backlog is reduced at private yards, more of the large private shipyards will be fighting for the work that has historically been Navy shipyard work.

Public Navy yards hold the capability and capacity to do work on a number of complex combatants in the fleet which some of the regional private yards are incapable of doing due to lack of technical capability. The complexity of modern Naval combatants requires that a ready base of technologically trained and experienced shipyard personnel be maintained for the existing fleet. As strategic and economic events change in the world, the size of that workforce needs to be determined in order to achieve the best and most efficient ship overhaul or conversion program. Public/private competition will play a major role in determining what the industrial base will look like in the next decade.

The next section will discuss the Navy's plan for the future and how it will impact mobilization planning.

#### **D. U.S. NAVY SHIPBUILDING PLAN**

During the 1980s, commercial shipbuilding competitiveness eroded with the elimination of the Construction Differential Subsidy.[Ref. 3:p. 7] As mentioned in Chapter III, U.S.

shipbuilders were priced excessively high when compared to foreign subsidized competition. Foreign yards were underbidding, and in some cases dumping ships on the U.S. market in order to gain market share. Due to these practices, U.S. commercial merchant vessel work seriously deteriorated and the Navy evolved as the primary customer for the major shipyard industrial base.[Ref. 3:p. 20]

The Navy's growth sustained some of the shipyard industrial base throughout the eighties but the nineties are challenging the endurance and adaptability of that base. Some procurement officials at NAVSEA believe that the industrial base was weakened over the years by the enactment of the Competition in Contracting Act and by splitting awards between several shipyards. It is thought that the U.S. has maintained too many shipyards by spreading out the work. The situation may have developed where the U.S. has several financially weak shipyards, instead of a few very healthy and strong shipyards.

Based on interviews conducted with procurement officials at NAVSEA, the Navy currently has excess shipyard capability for the requirements planned over the next six years. The need to have an adequate industrial base for the Navy is still a major priority and the requirement in the short-term should not be the only consideration when evaluating national shipbuilding requirements. The capabilities and the number of shipyards willing to compete for Navy business will continue

to change as the threat and the economic environment changes.

The U.S. Navy shipbuilding plan for fiscal years 1992 - 1997 includes the construction of 95 new ships, as illustrated in Table 4.4. More than \$50 billion is proposed for this plan. Only about a third of this amount goes to the actual ship procurement. The remainder is attributed to such items as Government-furnished equipment placed aboard the ships and other logistics program costs.[Ref. 17:p. 54]

The shipbuilding program represents a significant reduction in the amount of new shipbuilding work available to the nation's industrial base when compared with previous Navy programs. At an average of less than 12 ships per year, this program represents almost a 36 percent reduction in the quantity of ships to be procured, compared with the 19 ships per year average for Navy programs during the 1980s.[Ref. 18:p. 27]

A bright side to the shipyard mobilization base has been the ship construction and conversion activity for the Navy's T-ship program. T-ships are auxiliary vessels funded by the Navy budget but designed to be civilian-manned and under the control of the Military Sealift Command. Since 1979, 16 U.S. private shipyards have been awarded contracts for the construction of 60 new ships and the conversion of 31 existing ships. The initial contract value for these vessels totaled almost \$5.4 billion.[Ref. 18:p. 27-28]

**TABLE 4.4. NAVY PLANNED SHIPBUILDING PROGRAMS FISCAL YEARS 1991-1997**

<u>TYPE OF SHIP</u>	<u>FY 91</u>	<u>FY 92</u>	<u>FY 93</u>	<u>FY 94</u>	<u>FY 95</u>	<u>FY 96</u>	<u>FY 97</u>	<u>TOTAL</u>
CVN					1			1
SSBN	1							1
SSN-21	1	1						2
DDG-51	4	5	4	3	4	4	4	28
LHD	1							1
LSD-49	1							1
LX					1		1	2
MHC	2	3	2	1				8
MHC(V) OR MCM					1		2	3
T-AGOS		1		1	2		1	5
T-AGS	1	2		2				5
AR						1		1
AOE		1						1
LCAC (Landing Craft Air Cushion)	12	24						36
TOTAL	23	37	6	7	9	5	8	95

Source: Alden, John, "Getting it Right in the New Strategic Situation", Marine Log, Simmons-Boardman Publishing Corp., June 1992.

As of January 1, 1992, 17 new ships were either under construction or on order at four shipyards. The value of this order is approximately \$1.3 billion.[Ref. 18:p. 17]

The Navy is currently wrestling with constant change from Congress and the Department of Defense. Any program is only firm until the next budget cycle. The DOD cancellation of the "SEAWOLF" program earlier in 1992 was overturned by the House

and Senate by appropriating money to build two submarines. This gave needed work to the General Dynamics Electric Boat Division. Last year the Navy planned to be reduced to 450 combat-capable ships (some manned by reservists) by 1995; this year the target has shifted to 414 ships by 1997.[Ref. 18:p. 18] With this amount of political instability and the fact that the legislative process of authorizing ships and appropriating funds remains long and complex, it is unlikely the short term shipbuilding requirements will change from what is shown in Table 4.4. The most likely scenario would be to move planned shipbuilding programs further into the out years as funds are reprogrammed or cancelled.

As of January 1992, several Mobilization Base shipyards were involved with major Navy ship construction. Table 4.5 identifies the delivery dates, ships numbers and shipyards for current Navy construction contracts. Five shipyards stand out as possessing the majority of future work: Avondale Industries, Bath Iron Works, General Dynamics EB, Ingalls Shipbuilding and Newport News Shipbuilding. Much of the future Navy construction is being awarded to the east coast shipyards.[Ref Table 4.5]

**TABLE 4.5. NEW NAVAL VESSEL CONSTRUCTION**

<u>Shipyard</u>	<u>Navy No.</u>	<u>FY Program</u>	<u>Estimated Delivery</u>
Tampa Shipyards, Inc., Tampa, Florida	T-AO-191	85	7/92
	T-AO-192	85	12/92
	T-AGOS-23	90	5/94
Avondale Industries, New Orleans, Louisiana	T-AO-198	88	4/92
	T-AO-200	88	8/92
	T-AO-202	89	11/93
	T-AO-204	89	11/94
	T-AO-199	89	3/93
	T-AO-201	89	6/94
	T-AO-203	89	4/95
	LSD-48	86	3/92
	LSD-49 (CV)	88	1/94
	LSD-50 (CV)	90	9/94
	LSD-51 (CV)	91	8/95
	MHC-53	89	10/93
	MHC-54	90	2/94
	MHC-56	91	11/94
	MHC-57	91	3/95
	T-AGS-45	90	3/93
Bath Iron Works Corp., Bath Maine	CG-67	87	4/92
	CG-70	88	3/93
	DDG-53	87	9/93
	DDG-54	89	6/93
	DDG-56	89	2/95
	DDG-58	89	7/94
	DDG-60	90	12/94
	DDG-62	90	4/95
	DDG-64	91	9/95
General Dynamics Corp. Electric Boat Division, Groton, Connecticut	DDG-66	91	3/96
	SSBN-738	86	5/92
	SSBN-739	87	8/93
	SSBN-740	88	8/94
	SSBN-741	89	8/95
	SSBN-742	90	8/96
	SSBN-743	91	8/97
	SSN-760	86	3/92
	SSN-761	86	11/92
	SSN-762	86	6/93
	SSN-763	86	12/93
	SSN-768	88	9/94
	SSN-771	89	3/95
	SSN-21	89	5/96
	SSN-22	92	5/96?

**TABLE 4.5. NEW NAVAL VESSEL CONSTRUCTION**

<u>Shipyard</u>	<u>Navy No.</u>	<u>FY</u> <u>Program</u>	<u>Estimated</u> <u>Delivery</u>
Ingalls Shipbuilding, Inc., Pascagoula, Mississippi	CG-68	87	4/92
	CG-69	88	9/92
	CG-71	88	3/93
	CG-72	88	6/93
	CG-73	88	1/94
	DDG-52	87	10/92
	DDG-55	89	1/94
	DDG-57	89	6/94
	DDG-59	90	9/94
	DDG-61	90	1/95
	DDG-63	90	5/95
	DDG-65	91	11/95
	DDG-67	91	3/96
	LHD-2	86	5/92
	LHD-3	88	5/93
Intermarine USA, Savannah, Georgia	LHD-4	89	6/94
	LHD-5	91	12/96
	MHC-51	86	9/92
	MHC-52	89	2/93
	MHC-55	90	2/94
McDermott Shipyards, Morgan City, Louisiana	T-AGOS-20	89	4/92
	T-AGOS-21	89	10/92
	T-AGOS-22	89	4/93
National Steel and Shipbuilding Company, San Diego, California	AOE-6	87	4/92
	AOE-7	89	11/93
	AOE-8	90	6/94
Newport News Shipbuilding, Newport News, Virginia	SSN-759	85	1/92
	SSN-764	87	7/92
	SSN-765	87	11/92
	SSN-766	87	1/94
	SSN-767	87	8/93
	SSN-769	88	6/94
	SSN-770	88	11/94
	SSN-772	89	4/95
	SSN-773	90	10/95
	CVN-73	83	7/92
	CVN-74	88	12/95
	CVN-75	88	12/97

**TABLE 4.5. NEW NAVAL VESSEL CONSTRUCTION**

<u>Shipyard</u>	<u>Navy No.</u>	<u>FY</u> <u>Program</u>	<u>Estimated</u> <u>Delivery</u>
Peterson Builders, Inc., Sturgeon Bay, Wisconsin	MCM-9	85	8/92
	MCM-10	86	10/92
	MCM-11	86	5/93
	MCM-12	90	8/93
	MCM-13	90	11/93
	MCM-14	90	7/94
Trinity Industries, New Orleans, Louisiana	T-AGS-52	87	1/92
	T-AGS-60	90	1/94
	T-AGS-61	90	7/94

Source: Shipbuilders Council of America, Naval Shipbuilding, January 1992.

Currently, the only major west coast shipyard considered part of the active U.S. Shipbuilding Base involved with Navy work is National Steel & Shipbuilding Company (NASSCO). They are currently building three Fast Combat Stores Ships (AOEs, USS SUPPLY class). The west coast shipbuilding costs are approximately 4.5 percent higher than the east coast yards, and 9.2 percent higher than the gulf coast shipyards. Wage rates alone are 18.7 percent higher than the east coast.[Ref. 1:p. 216]

How successfully National Steel and Shipbuilding Company can compete for Navy and commercial work in the future will determine whether they stay a viable shipbuilding base asset. Also, there may not be a need to maintain a major construction shipyard on the west coast with the reduced maritime threat and the thrifty economic climate. In 1984, the Supervisor of Shipbuilding, Conversion and Repair sent a letter to major

shipyards on the west coast stating that unless shipyards got wage costs more in line with eastern competitors, they could not expect to get any more work.[Ref 19] This highlights the problem that western shipyards have when competing for ship construction contracts. Price will continue to be an important factor when evaluating for contract award and the east coast yards seem to have the competitive advantage.

As previously shown the U.S. shipyards have an advantage over foreign competitors in building very sophisticated technically advanced ships. This could result in needed business if the yards were to successfully attack the technically complex commercial market. This includes Liquid Natural Gas (LNG) carriers, sophisticated offshore drilling rigs, large barge vessels and double hull tankers. The U.S. Navy construction work is drying up, but keeping the shipbuilding industrial base open and working guarantees future availability for the country if the need were to arise.

#### **E. SUMMARY**

The Naval shipbuilding base will get smaller and the market forces will keep the financially strong and economical shipyards open. Shipyards with large parent companies having "deep pockets" like Newport News Shipbuilding (Tenneco), Ingalls Shipbuilding (Litton), General Dynamic Electric Boat Division and possibly NASSCO (Morrison-Knudsen), are expected to survive in the future. As the Navy downsizes and the

backlog of ship construction shrinks, the shipyards identified by MarAd as the mobilization base, may be hard pressed to find additional work. Many of the yards will convert to other forms of construction, such as, smaller ship classes, double hull tankers, small patrol boats, barges, conversion, repair work and even some cross-industry manufacturing. Some of the smaller yards are entering the steel underwater tunnel construction to keep their workforce going.[Ref. 18:p. 19]

There is hope that the U.S. will resume global competitiveness within the shipbuilding market in the 1990s. The need for replacement tonnage throughout the world, coupled with the emerging requirements by the Merchant Marine have the potential to keep the U.S. shipbuilding industry healthy.[Ref. 4 :p. 32] Increased competition between public and private shipyards is anticipated as new construction dwindles for most of the major construction yards. World labor rates are leveling and subsidy programs are being reduced among shipbuilding nations. Greater U.S. interest is being paid to a legislative recourse in trying to eliminate subsidies.

Chapter five addresses conclusions and recommendations determined as a result of research.

## **V. CONCLUSIONS AND RECOMMENDATIONS**

### **A. GENERAL**

The shipyard mobilization base is essential to the national security of the United States. Various legislative and policy changes have tried to bolster the industry with varied success. An underlying fact is that a large portion of a shipyard's value is placed upon its geographic location. Protecting its value mandates that the U.S. possess a shipyard mobilization base of some specified size. The correct size is a constantly moving target, especially in the 1990s as the world threat continues to evolve.

The shipbuilding industry stands at a crossroads in the 1990s. The majority of U.S. shipyard work is currently coming from the U.S. Navy construction, overhaul and repair programs. With the imminent completion of the Navy build-up begun in the 1980s, coupled with its current downsizing, and the lack of commercial shipbuilding programs, the major shipyard construction capability in the U.S. will continue to erode.

On the other hand, the industry has the capability to compete on a commercial basis if subsidies are eliminated by foreign governments and the industry is able to shift facilities and capital investments to adapt to the smaller requirements in the future.

## **B. CONCLUSIONS**

- 1. The shipbuilding base is adequate to meet the U.S. Navy needs.**

The existing shipbuilding base and repair base is adequate to satisfy the initial activation and repair demands of the Navy in the near future. Based on interviews conducted with NAVSEA personnel, the shipyard mobilization base has excess shipyard capacity based on current and foreseeable requirements of Navy shipbuilding programs.

With the reduction of Navy work, the industrial base will be substantially reduced in the future and shipyards with rich parent companies that currently have the majority of Navy construction work, are most likely to continue major construction work. MarAd continues to track shipyard capabilities annually, and as of 1991, they have determined that the shipyard base is adequate to meet national requirements.

- 2. U.S. defense expenditures will no longer provide sufficient work to maintain the current U.S. shipbuilding capacity.**

Interviews conducted and statistics gathered from the Shipbuilders Council of America, NAVSEA procurement personnel, and MarAd employees have found that the current industrial base (as identified by MarAd 1991 study) has excess capacity. The projected Navy construction program alone will be unable to support all the shipyards included as the 1991 industrial

base (Table 4.2). The shipyards expected to be strong players in future Navy construction work are: Newport New Shipbuilding, because they can build nuclear aircraft carriers and nuclear submarines along with many combatants; Ingalls Shipbuilding, with their capability to build amphibious ships and combatants; Avondale Industries, for the construction of the T-ship program, mine sweepers and amphibious ships; General Dynamics Electric Boat Division, because of their nuclear submarine construction capability with the SEAWOLF program (although their survival can be debated because the Navy may not need two submarine builders in the future and Newport News has much more capabilities than Electric Boat); and finally Tampa Shipyards, that builds T-ships and small craft. Bath Iron Works is considered one of the better run shipyards, but has assumed a lot of debt with the many buy-outs and mergers over the years (see Appendix A). Their future is questionable, but they have survived through hard times for many years.

**3. World ship construction is expected to accelerate in the mid 1990s.**

DOD has budgeted about \$3 billion for new sealift vessels and the NOAA has begun a significant vessel acquisition program.

The world merchant fleet is aging and the tonnage requirements show that the world shipbuilding industry will be busy in providing replacement ships. New ship construction is

also being generated by requirements of the U.S. Pollution Act of 1990, which calls for double hull tankers for operating on U.S. waters by 1995. If the U.S. shipbuilding industry can become efficient producers, and if world subsidies are eliminated, then many of the U.S. yards could stay busy with commercial work until at least the year 2000. [Ref. 3:p. 43-44]

**4. There will be increased competition between public and private shipyards for work throughout the 1990s.**

As the industrial base gets smaller, the allocation of conversion, alteration, and repair work between public and private shipyards will be intensely challenged by Congressional committees and industry trade organizations. As the Navy construction backlog shrinks, the competition will increase between public and private shipyards as the larger construction yards (Table 4.2) challenge for additional business.

**5. The U.S. has a great opportunity to compete in the international shipbuilding market.**

The U.S. is approaching the best opportunity to compete in the commercial shipbuilding market since the elimination of the Construction Differential Subsidies in 1981. There is a surge in new construction forecasted to start in the mid-1990s and continue until the end of the decade. Germany and Japan are reducing subsidies and the Gibbons Bill is in process, which at the very least should bring some heightened interest in eliminating subsidies

altogether. U.S. labor rates are becoming more competitive in the world shipbuilding market. Currently the U.S. ranks ninth among shipbuilding nations in labor rates.

- 6. U.S. Shipbuilding Mobilization Base (Table 4.2) has specialized capabilities that should be marketed to specific areas of the shipbuilding industry.**

The construction of technically complex ships like liquid natural gas carriers, chemical carriers, complex drilling platforms and high-tech small patrol craft utilize similar skills used in combatant and auxiliary constructions. It is unlikely that the U.S. could compete in the construction of large, simple ships, such as large crude oil tankers and the larger container carriers. Low wages and previous heavy investment in labor productivity improvements still provide a significant advantage to countries concentrating on those type of ships. The future of the U.S. market lies in specialized, technically complex ships.

### **C. RECOMMENDATIONS**

- 1. The U.S. needs to develop a national industrial policy.**

The U.S. needs to develop a cohesive national industrial support policy addressing the current and future shipyard requirements. No plan exists and there is no provision to ensure the U.S. has a domestic source for military vessel construction. Competition is increasing

between public and private yards for conversion and overhaul programs. The result of this competition may be beneficial or detrimental based on the requirements for future shipbuilding capabilities. Failure to establish a comprehensive policy soon could leave the Government no choice but to reinstate very expensive subsidy programs to keep the required industrial base operating.

- 2. Stronger legislation should be enacted to eliminate world subsidy practices to give the U.S. shipbuilders a "level playing field" in which to operate.**

The Shipbuilding Trade Reform Act of 1992 was an attempt to tax foreign-built subsidized ships as they enter U.S. ports in an effort to force foreign shipbuilders to eliminate subsidies. The OECD has been negotiating for years to get an agreement on subsidies. If the OECD could be successful in achieving an international agreement, U.S. shipbuilders would be more willing to repeal the Jones Act and other U.S. support programs. The premature U.S. repeal of construction differential subsidies and the continuance of foreign subsidies, eliminated the U.S. commercial shipbuilding market starting in 1981. If world subsidies are not eliminated, or the U.S. does not establish a policy to penalize countries that have subsidy programs, the U.S. shipbuilding industry will not be competitive for the new work anticipated for the mid-1990s.

3. **A Government program designed to stimulate the entry of U.S. shipbuilding into the international commercial market to enhance their competitiveness is needed.**

With the current U.S. debt, there is little chance the Government will create subsidies or major financial incentives for the shipbuilding industry. With the future global requirements for double-hull tankers and the need for sophisticated chemical carriers and liquid natural gas ships, the U.S. may be able to field support for these ships by marketing the shipbuilding industry. Incorporating certain construction and support arrangements for the U.S.-built ships could help keep the U.S. industrial base intact and the industry healthy.

#### **D. RESEARCH QUESTIONS**

1. **Should the Navy let free competition dictate which shipyards remain in business or should an active decision be made to maintain industrial shipbuilding capability in strategic parts of the country?**

With the reduced global threat and the need to lower the national debt, the shipyard industry will have to survive on the amount of business they are able to gain from the commercial market. The shipyard base is expected to erode but not to alarming levels. The health and size of the industry is currently being tracked by MarAd, and at this point there is no major cause for alarm. The amount of commercial work

forecasted in the mid-1990s is considerable. The U.S. should be able to maintain a large portion of its industrial base with some legislative assistance in eliminating world subsidies and increased competition between public and private yards.

There has been a concern that NASSCO is the only major construction shipyard on the west coast currently bidding on major construction contracts. Some industry representatives are concerned about this. This thesis found that the west coast ship yards are much more expensive to operate than those in the gulf and in the south east. With the reduced global threat and the lack of a major blue-water threat, it is unlikely that the loss of the only west coast shipyard would be strategically detrimental to the U.S. A number of shipyards currently working ship overhaul and conversion on the west coast still have the capability to build ships if they so choose. The loss of NASSCO may eventually prove to be more economical by permitting the future awards to cheaper south east shipyards.

**2. Where are the major shipyards and what unique capabilities do they possess?**

The major shipyards are those that are identified in the Maritime Administrations list of mobilization assets in Table 4.2 in Chapter IV. The list includes 16 privately owned U.S. shipyards which are "open and currently engaged in or seeking contracts for the construction of major oceangoing or

Great Lakes ships 1,000 gross tons or over." [Ref. 16:p. 41]  
The eight Naval shipyards are not directly considered part of the mobilization base but are taken into consideration when evaluating the adequacy of U.S. shipbuilding and overhaul capabilities.

MarAd and NAVSEA review the mobilization base to determine its adequacy in meeting the future requirements for the Maritime Administration's RRF and proposed Naval programs.

**3. What does the budget include for new construction and overhauls and which shipyards are most likely to compete?**

The current budget includes construction of 95 Naval vessels between Fiscal Years 1992-1997. As the budget process continues and the new presidential agenda is evaluated, the Navy construction programs are certain to change. Currently, there are just a few shipyards that will be involved with Navy construction over the next six years.

Newport News Shipbuilding is one of the most enduring shipyards because they have the capability to build nuclear aircraft carriers, nuclear submarines, combatants and many other types of ships. Ingalls Shipbuilding is building amphibious ships, combatants and has an advantage in low labor rates. Avondale Industries is building mine sweepers, amphibious ships and has contracts for a few ships from the T-ship program. General Dynamics Electric Boat Division has

some additional work because of the reinstatement of the SEAWOLF program. Their long term future is jeopardized, however, by the possible U.S. inability to provide sufficient business to support two nuclear construction shipyards (Newport News and Electric Boat). Smaller shipyards, such as Tampa Shipyards, will be viable for construction of T-ship programs and small patrol craft for the Coast Guard and Navy. Bath Iron Works is considered one of the better run shipyards but they are not financially secure due to the buy-outs and mergers over the years (see Appendix A). Any major setback in construction could adversely affect their continued success.

**4. What is the current and any proposed legislation concerning competition and protection of the industrial base?**

There has been a large amount of legislation enacted on behalf of the shipbuilding industry over the years (Chapter III). Repealing the Construction Differential Subsidies in 1981 virtually eliminated the U.S. commercial shipbuilding market (see Figure 1).

The Jones Act continues to protect U.S. shipyards by restricting foreign shipbuilders from providing ships for operation between U.S. ports for commerce and transportation.

The proposed legislation included in the Gibbons Bill, is an effort to force the elimination of foreign subsidized ships from U.S. business. Additional legislation and cooperation with the OECD is needed to force the elimination

of world subsidies. Resolving the subsidy issue is probably the single most important thing that Congress and the shipbuilding industry could do in guaranteeing continued mobilization base survival through the revival of the U.S. commercial shipbuilding market.

**5. How is the shipbuilding industry reacting to downsizing.**

The shipbuilding industry is in the process of reorganizing their emphasis from defense related business to commercial work. The mid-1990s had the potential for the U.S. shipyards to gain back some of the market share they lost to foreign competition. Foreign labor rates are rising when compared to the U.S. thus narrowing the gap. The subsidy issue is getting increased attention and resolution of the problem should be forthcoming.

The only way to reconstitute a commercial shipbuilding base that will also support any Naval maritime requirements, is for the U.S. shipyards to become competitive in the world market. U.S. shipbuilders must build 30-50 commercial ships per year to support present physical capacity, given the projected Naval workload through 1997. It is paramount that the U.S. shipbuilders become more efficient and competitive to achieve this goal.

Many of the shipyards identified by MarAd in the 1991 mobilization base will reorganize into commercial work or switch to other forms of shipbuilding like conversion and

overhaul. The increase in resources at NOAA and the recommendations of the DOD MRS study have guaranteed a large amount of conversion and overhaul work during the next ten years.

**6. What recommendations can be developed to help both Government and industry in retaining vital shipbuilding capabilities?**

The U.S. needs to develop a cohesive national industrial support policy addressing the current and future shipyard requirements. No plan exists and there is no provision to ensure the U.S. has a domestic source for military vessel construction.

MarAd, in their annual survey (much of which is classified and will not be released), has determined that the industrial base, as of 1991, is adequate to support the current and future requirements of the nation. As the amount of Navy construction backlog is reduced, many more shipyards will leave the industrial base and transition to other work. Establishing a national industrial policy could clarify guidance to DOD and industry representatives for future requirements and investment strategies.

Stronger legislation should be enacted to eliminate world subsidy practices to give the U.S. shipbuilders a "level playing field" on which to operate. The OECD has been negotiating an agreement on subsidies. As of 1992, they have been unsuccessful. If the OECD were successful in achieving

an international agreement, the U.S. shipbuilders would be more willing to repeal the Jones Act and other U.S. support programs.

The Government should establish a program designed to stimulate the entry of U.S. shipbuilding into the international commercial market and to enhance their competitiveness if needed.

With the current deficit problem, there is a slim chance the Government will create subsidies or major financial incentives for the shipbuilding industry. With global requirements for double hull tankers and the need for sophisticated chemical carriers and liquid natural gas ships, the U.S. may be able to field support by marketing the shipbuilding industry. Incorporating certain construction loan guaranties and fostering support arrangements for U.S.-built ships could help keep the industrial base at an acceptable strategic size.

#### **E. SUGGESTIONS FOR FURTHER RESEARCH**

1. Review the results of the DOD Mobility Requirements Study and evaluate the how they compare with the lessons learned from Operation Desert Storm. The MRS is a recently completed study by DOD that identifies the requirements for sealift services for future contingencies. This study will have future impact on the amount and type of services utilized for ship

conversion and overhaul programs.

2. Analyze the types of contracts used over the years and determine the most advantageous method for both the Government and industry.
3. Evaluate the shipyard job skill requirements and assess the skills that would be difficult to reconstitute once lost. It is thought that certain job skills are too hard to generate once they are lost, such as nuclear shipbuilding. There is a need to identify the critical skills so proper precautions could be taken to preserve that capability.

**APPENDIX A: DESCRIPTIONS OF THE 17 MAJOR U.S. SHIPBUILDING  
FACILITIES**

DESCRIPTIONS AND GENERAL ARRANGEMENT PLANS  
FOR  
17 MAJOR U.S. SHIPBUILDING FACILITIES  
EXCERPTS FROM REFERENCE 17

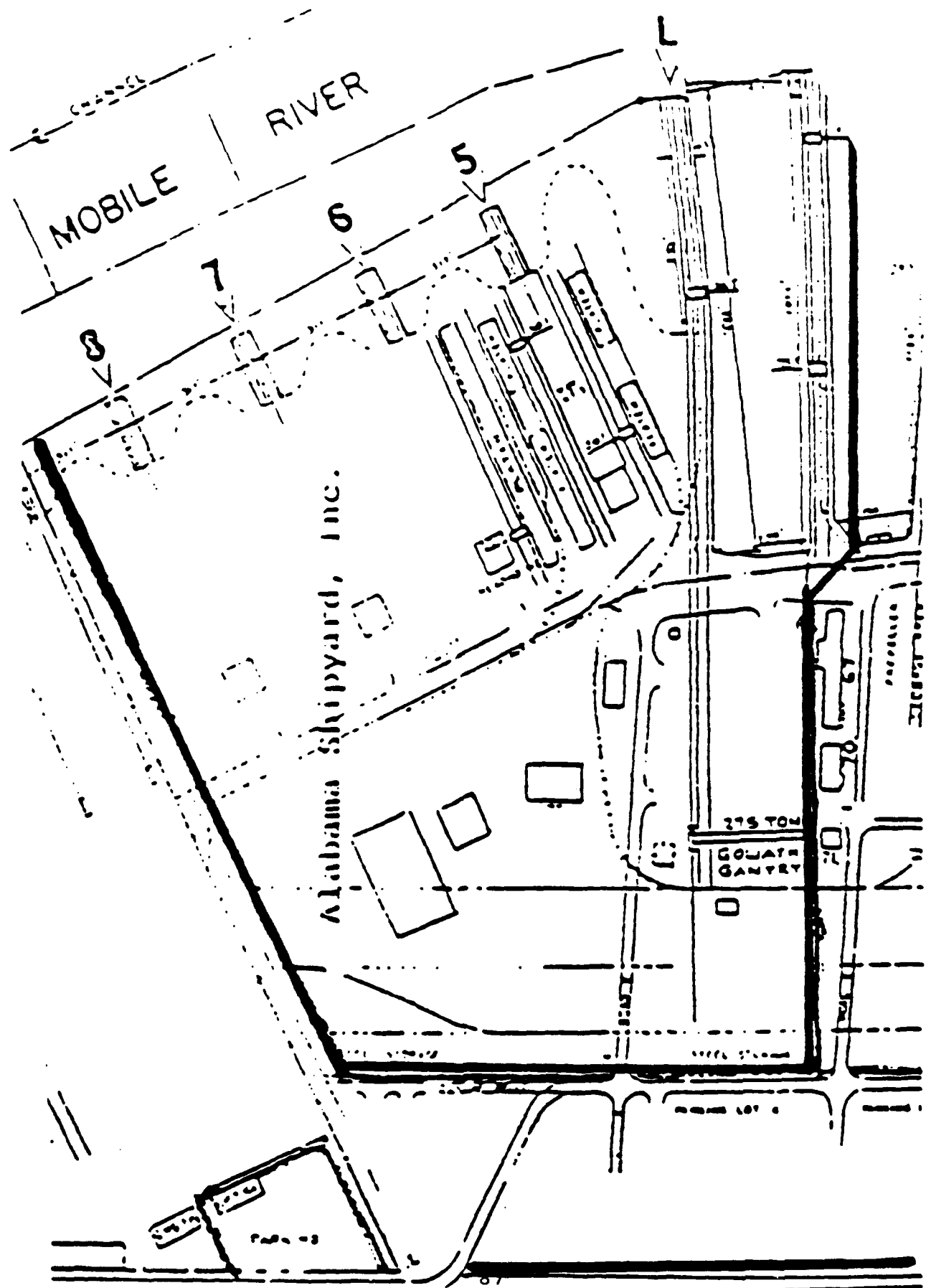
1. Alabama Shipyard, Inc.

Alabama Shipyard, Inc., is a wholly-owned subsidiary of Atlantic Marine Holding Company of Jacksonville, Florida. Alabama Shipyard, Inc., (formerly ADDSCO's Alabama Maritime Corporation), is a new construction facility specializing in both marine and industrial fabrication. The shipyard is located on the Mobile River, across the river from Mobile, Alabama, about 30 miles from the Gulf of Mexico. Acquired by Atlantic Marine in 1989, the yard has been in existence since 1916 and has constructed a variety of ships (both commercial and naval), barges and drill ships.

As of October 1, 1991, work underway at Alabama Shipyard included construction of one floating steam boiler barge and six crane barges for the U.S. Navy.

Alabama Shipyard, Inc., is capable of constructing ships up to a maximum size of 213 meters by 27 meters (700 ft by 90 ft). The shipyard has 12,076 square meters (130,000 sq. ft) of manufacturing space, 7,432 square meters (80,000 sq. ft) of covered warehouse space, two finger piers with total usable pier space of 1,219 meters (4,000 ft), and a 250-metric ton bridge crane. The yard utilizes a 213-meter (700 ft) transfer launching system. Various other gantry cranes, as well as a plate shop and a carpenter shop, are available for construction. The yard also has access to a twin-boom luffing derrick capable of handling 1,400 metric tons, which can be used for lifting heavy offshore structures.

As of mid-1991, Alabama Shipyard's employment totaled 239, up from 191 a year earlier.



2. Avondale Industries, Inc. - Avondale Shipyards Division

Avondale Shipyards Division is located on the west bank of the Mississippi River approximately six kilometers (nine miles) upriver from New Orleans, Louisiana. Avondale, previously a wholly-owned subsidiary of Odgen Corporation, was sold in 1985 to its employees in an Employee Stock Ownership Plan (ESOP). Since 1938, Avondale has constructed a full range of Navy and commercial ships, as well as Coast Guard cutters and offshore drilling rigs; and it has the distinction of being the only American shipyard to have constructed LASH vessels.

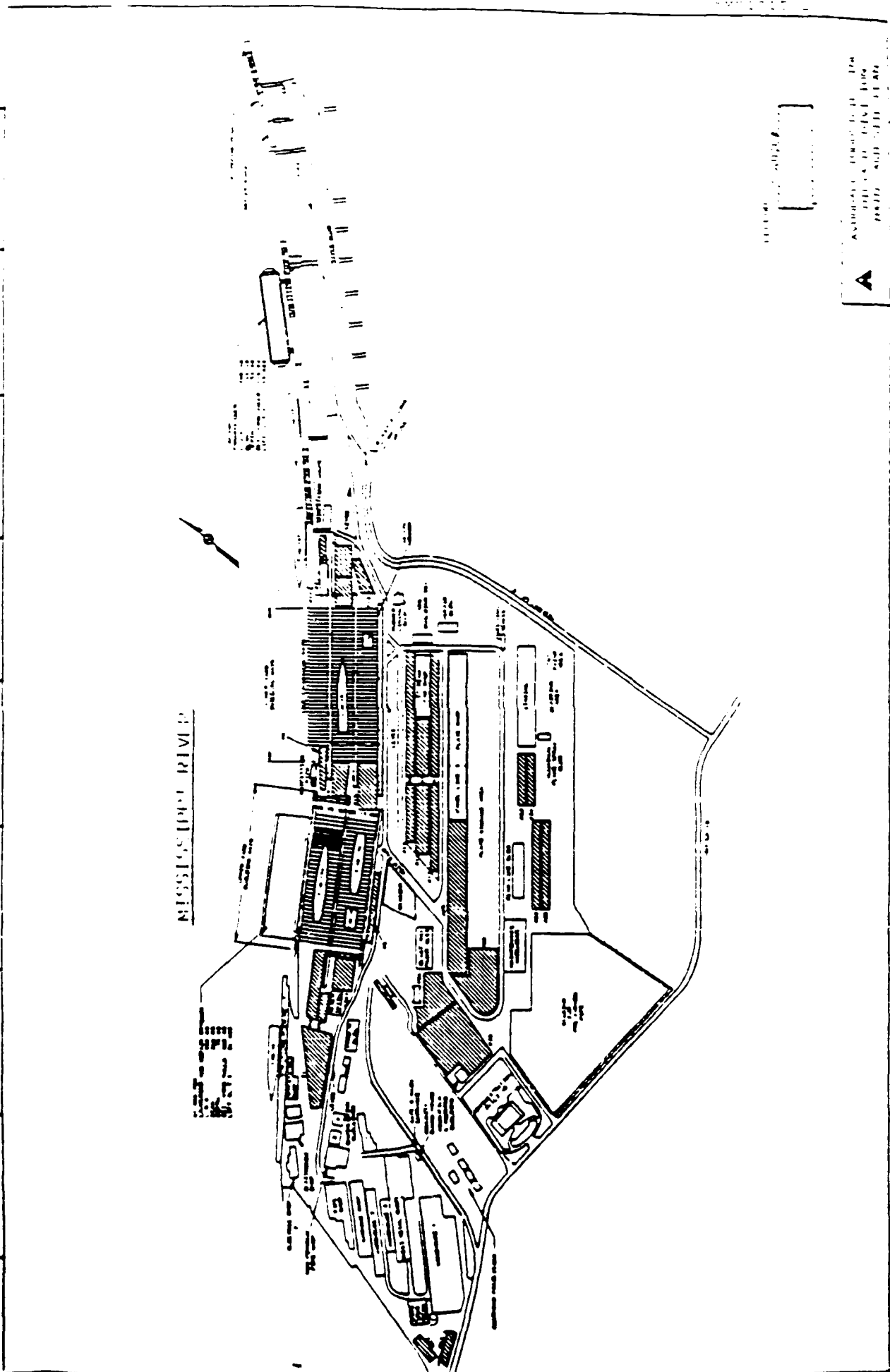
Avondale also maintains an active repair operation for commercial and naval ships. Inland waterway and offshore oil vessels are repaired by Avondale's Westwego and Harvey Divisions. Offshore platforms, jackets, and production modules are constructed by Avondale's main plant.

Avondale's new construction orderbook as of October 1, 1991, consisted of one oceanographic survey ship (T-AGS 45), eight fleet oilers (T-AO's) and four dock landing ships (LSD's). In addition, Avondale has contracts for the jumboization of three Navy fleet oilers of the AO-177 class.

Avondale's main yard facility totals 101 hectares (250 acres) and contains three outfitting docks equipped with supporting shops and over 1,829 meters (6,000 ft) of pier space. Avondale's upper yard shipbuilding area has two large positions to accommodate vessels of up to 311 meters (1,020 ft) in length by 53 meters (175 ft) beam. The major part of one ship can be erected along with the stern section of a second ship on position No. 1, while a third hull is being completed on position No. 2. Ships constructed in the upper yard move laterally in three positions for launching by Avondale's large floating drydock, which can accommodate ships as large as 305 meters by 66 meters (1,000 ft by 216 ft), with a lifting capacity of 82,296 metric tons. Avondale's lower yard has a side-launching construction area that has three large positions to accommodate ships as large as 366 meters by 38 meters (1,200 ft by 126 ft). Ships built in the lower yard move laterally toward the river and parallel to the river in five positions. Up to five large vessels, greater than 213 meters (700 ft) LOA, can be constructed simultaneously in the lower yard. A Panamax floating drydock is moored in this area, which can accommodate ships up to 229 meters by 34 meters (750 ft by 110 ft), and has a lifting capacity of 20,320 metric tons.

Avondale's nearby Westwego, Louisiana, facility is capable of building vessels 137 meters (450 ft) long by 27 meters (90 ft) beam. In 1988, Avondale long-term leased the ex-Todd Shipbuilding Corporation's New Orleans yard which is now called the Avondale Algiers Repair and Overhaul Facility and is used for ship repair, conversion, and overhaul.

In mid-1991, the total employment was about 7,300.



MISSISSIPPI RIVER

ASSEMBLY ROOM 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

A

3. Bath Iron Works Corporation

Bath Iron Works Corporation (BIW), a wholly-owned subsidiary of Bath Acquisition Corporation, which is a subsidiary of Bath Holding Corporation, is located on the Kennebec River in Bath, Maine. The small iron foundry which was established on this site in 1826 became Bath Iron Works, Ltd., in 1884, and the first shipbuilding began in 1889. This yard has constructed various type of ships including roll-on/roll-off cargo vessels, container ships, tankers, dredges, barges, and fishing vessels. Bath also has built 212 surface Navy combatants.

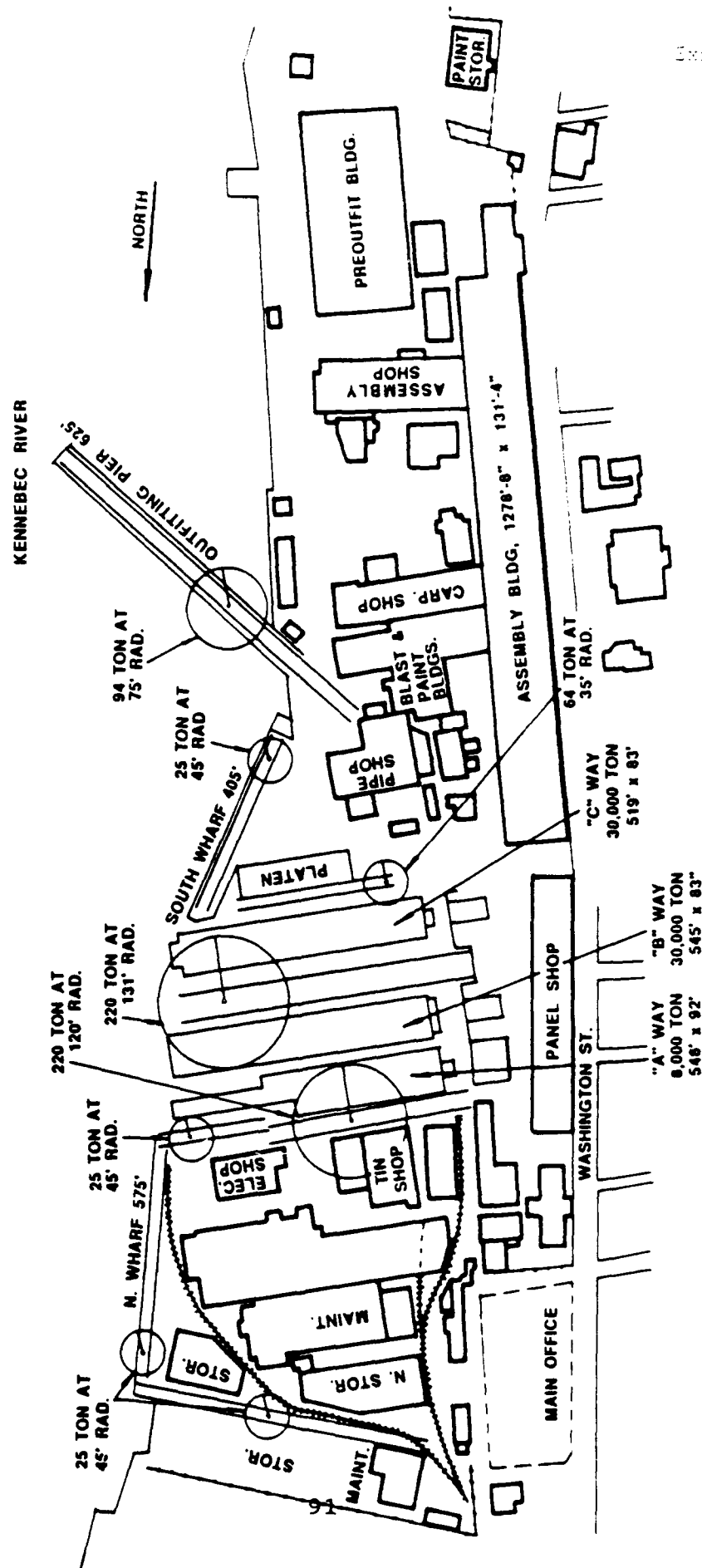
BIW was the lead shipbuilder for the Navy's guided missile frigate (FFG-7 class) program and was awarded contracts for the construction of the 24 FFG-7 class frigates. In 1982, the Navy selected BIW as its second source for the high-technology CG 47 class AEGIS cruiser program, awarding the company contracts to build eight of these TICONDEROGA class cruisers - the last of which is scheduled for delivery in 1992. In 1985, BIW was selected as the lead shipbuilder for the design and construction of the Navy's ARLEIGH BURKE class guided missile destroyer (DDG-51) program. Nine DDG's have been ordered from BIW - the last is scheduled for delivery in 1996.

BIW's facilities include two shipways to accommodate ships of 213 meters (700 ft) in length with a maximum beam of 40 meters (130 ft), or two ships per way with a beam of 16 meters (54 ft) each; and a 220 metric ton level-luffing crane with sufficient outreach to erect units on both shipways. The pre-outfit building, opened in 1987, is 61 meters by 125 meters (200 ft by 410 ft) and has 18 work stations for 219 metric ton erection units. BIW also added a new 220 metric ton capacity revolver crane to serve the third shipway. The shipway can accommodate a ship 198 meters (650 ft) in length with a beam of 27 meters (88 ft). Two wharves and a pier provide a total of 655 meters (2,150 ft).

BIW operates two support facilities in East Brunswick, located 4.8 kilometers (3 miles) from the main plant. The 13 hectare (33 acre) Hardings fabrication plant is where the initial steel fabrication takes place. The 24 hectare (60 acre) East Brunswick facility is the location of the 113,000 cubic meter consolidated warehouse which uses state of the art equipment to accomplish the transfer, handling, and storage of shipbuilding inventory. A new 11,148 square meter (120,000 sq. ft.) pipe and sheet metal fabrication facility was added in 1989.

BIW operates the Portland Overhaul and Repair Facility in Portland, Maine. This facility has a large floating drydock with a lifting capacity of 65,000 metric tons, which can accommodate a vessel up to 257 meters by 41 meters (844 ft by 136 ft). This facility also supports new construction programs as the site where sonar dome installations and Post Shakedown Availabilities (PSA's) are performed. A 9,500 metric ton lift drydock has recently been used to overhaul four WHEC class Coast Guard ships.

As of mid-1991, the company employed a total of 10,805, compared to 11,816 a year earlier.<sup>90</sup>



**BATH IRON WORKS CORP.**

#### 4. BethShip Sparrows Point Yard

The BethShip Sparrows Point Yard is located on the Patapsco River in the port of Baltimore, Maryland. Established in 1891, the yard became a part of the Bethlehem organization in 1916 and served as a major shipbuilder during two world wars. During World War II, Sparrows Point constructed 101 vessels of 16 different classes. During the 1950's, 1960's and 1970's, the yard was among the most active in the nation, specializing in series construction of standard size tankers up to VLCCs, freighters, and containerships.

Since the beginning of 1981, the yard has constructed six Integrated Tug Barge (ITB) tankers, six offshore drilling rigs, two container feeder barges, and two oceanographic survey ships for the U.S. Navy. During this same period, the yard has adapted to changing markets by increased efforts in ship conversion and repair and industrial fabrication. In addition to numerous drydockings and repairs on commercial and Naval ships, three RO/ROs have been converted to Maritime Prepositioning Ships, five RO/ROs have been reflagged, and tunnel sections for a new Interstate 664 Hampton Roads Tunnel Complex have been completed. The yard is currently working on tunnel sections for the new Interstate 90 project in Boston.

The major component of this shipyard is the building basin (the second largest in the U.S.) for construction or repair of ships as large as 365 meters by 59 meters (1,196 ft by 194 ft) up to about 300,000 dwt. A two-position intermediate gate has been installed to increase the flexibility of the basin by dividing it into two sections. In one position the basin's sections are 274 meters and 91 meters (900 ft and 300 ft) in length. In the second position, the sections are 209 meters and 157 meters (685 ft and 515 ft) in length.

Complementing the large construction basin, which is served by four 181-metric ton revolving cranes, the shipyard maintains two building ways. Each way can accommodate a maximum ship size of 244 meters by 32 meters (800 ft by 106 ft). Four outfitting berths are available with a combined length of 1,210 meters (3,969 ft). The berths are served by five revolving cranes with lifting capacities up to 45 metric tons. Several mobile cranes of various capacities are also available.

BethShip Sparrows Point Yard also has a floating drydock capable of lifting 44,735 metric tons. The drydock can accommodate vessels up to 274 meters (900 ft) in length with a beam of up to 41 meters (136 ft) and a draft up to 9 meters (30 ft). The entry channel to the yard has a depth of 9 meters (30 ft).

The total labor force at the BethShip Sparrows Point Yard was 539 at mid-1991, down from 1,330 a year earlier.

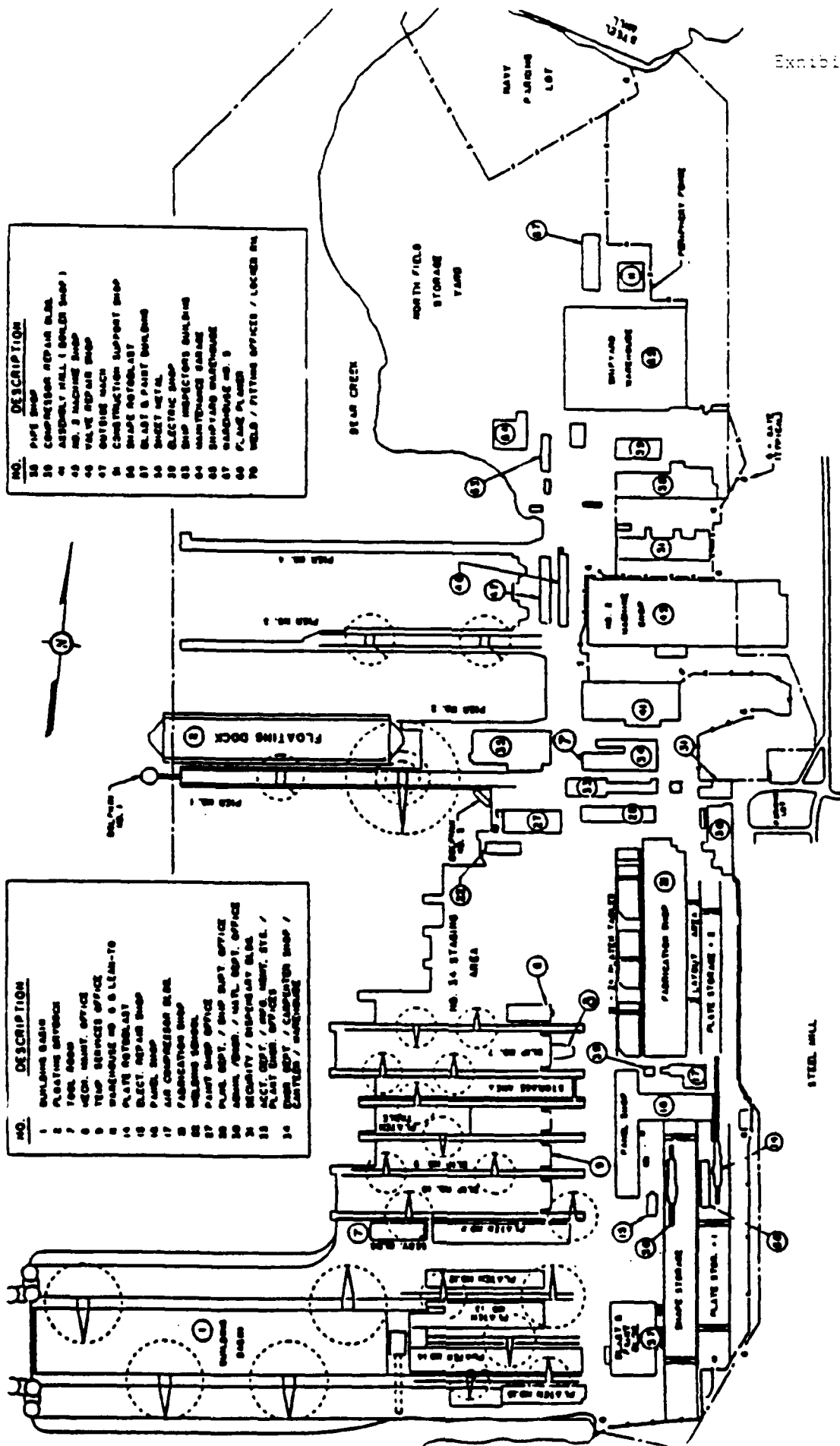


Exhibit 4

5. Fraser Shipyards, Incorporated

The Fraser Yard, the only major American shipyard and drydock operation on the western end of the Great Lakes, is located on Howards Bay in Superior, Wisconsin. Since it was founded in the 1890's by Capt. Alexander McDougall, who built 42 of his famous "whaleback" steamers and barges there, this plant has had a succession of owners. From 1900 to 1926, Superior Shipbuilding Company operated the yard and built more than 50 large Great Lakes ore carriers. The yard became a repair facility of the American Ship Building Company from 1926 to 1945 and then became known as Knudsen Brothers Shipbuilding and Dry Dock Company. Fraser-Nelson Shipbuilding and Dry Dock Company took over the plant in 1955, and the present name was adopted in 1964. In August 1977, the yard was sold to Reuben Johnson & Son, Incorporated, a Superior, Wisconsin, contracting and construction firm, but business continues under the Fraser name.

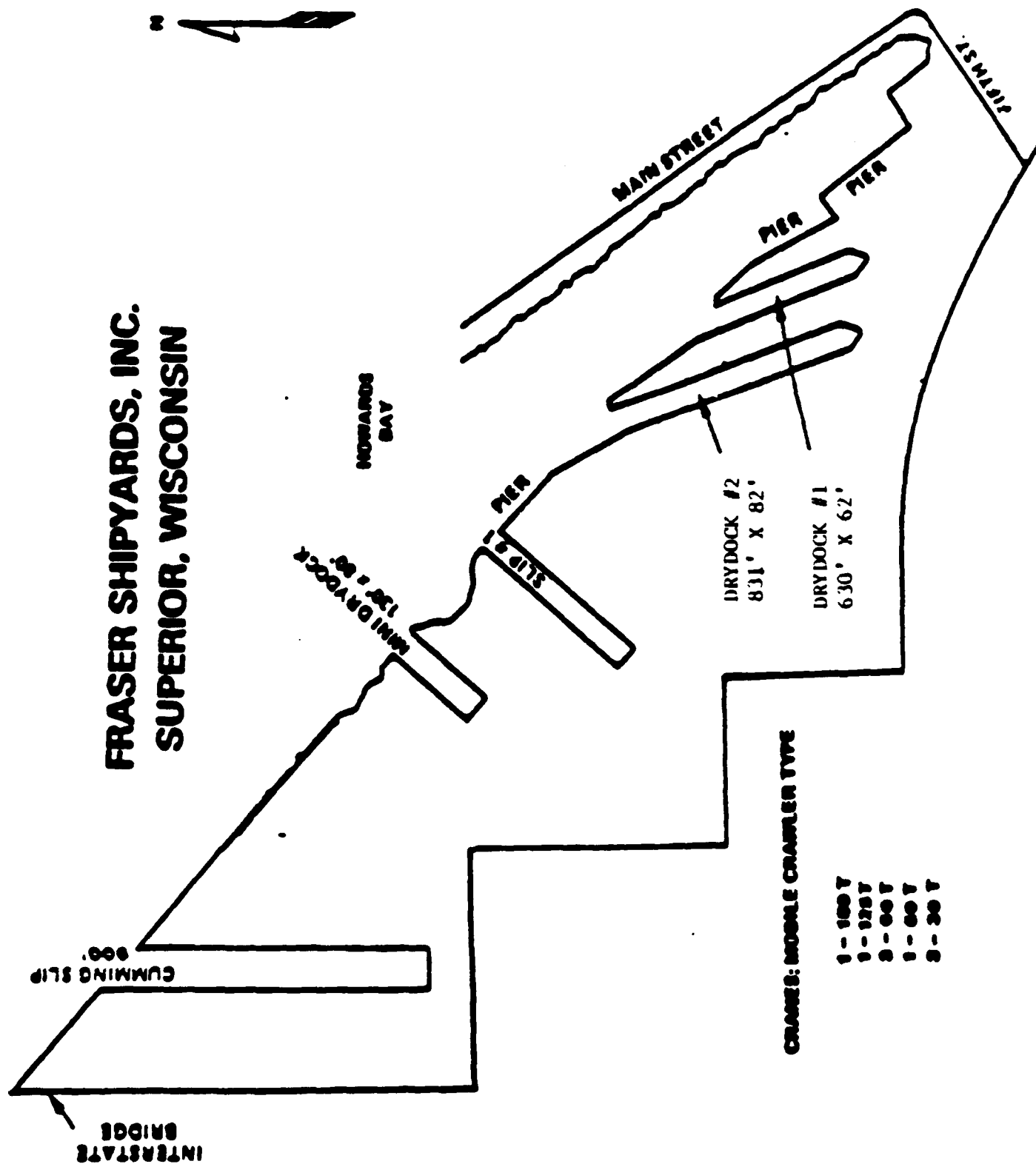
Since World War II, Fraser Shipyards, a complete shipbuilding and ship repair facility, has specialized in vessel repair and ship modernization. In the past 20 years, Fraser has performed most of the major ship lengthening work on the Great Lakes. At this shipyard, general ship repair also has been an important source of revenue.

In the early 1980's, the Fraser yard instituted a major renovation of its fabrication capabilities, including a 40 percent increase in its platen table capacity and extension of its railroad trackage to increase steel unloading capabilities by 300 percent. An all-new steel cutting process with hydraulic loading and unloading tables was installed, as well as major repowering of the shipyard to support the expanding facilities and to improve existing capacity. New automated welding equipment and related modern techniques also were introduced to increase productivity. In 1990 Fraser installed a new brake, as well as a new shear.

Fraser maintains two graving docks suitable for ship construction, repair, and conversion work. One basin can accommodate a vessel 251 meters by 25 meters (825 ft by 82 ft), and the other a vessel 189 meters by 19 meters (620 ft by 61 ft). A small graving-type dock was added in 1973 to build new midbody sections for the lengthening of bulk-ore freighters under contract at that time. Pierside berthing totals 1,356 meters (4,450 ft).

Fraser's 10 mobile cranes, ranging from 14 to 136 metric tons can service all building docks, as well as outfitting and repair berths, and also can be floated on a crane lighter for work afloat. The company also operates an "outside" repair fleet totaling 12 units -- tugs, work launches, and barges -- capable of performing repairs on vessels while they are loading or unloading cargoes in Duluth-Superior harbor and adjacent ports.

In mid-1991, employment was about 160 people.



6. Halter Marine, Inc., Moss Point Division.

The Halter Moss Point (HMP) facility is located on the Escatawpa River in Moss Point, Mississippi, a short distance from the Gulf of Mexico and Interstate 10. Significant features of the HMP yard include: a protected, deep-waterway location; large module fabrication and assembly platens; two launchways; lift capacity of up to 272 metric tons; full range of outfitting services; and full-service warehousing facilities.

HMP recently delivered the AGOR 23 Oceanographic Research Ship and is constructing two T-AGS 51 Class Hydrographic Survey Ships, two T-AGS 60 Class Oceanographic Survey Ships, a 73 meter (241 ft) Tow Boat/Inspection Vessel and a 91 meter (300 ft) Dustpan Dredge, both for the Army Corps of Engineers.

The Halter Moss Point facility is equipped and staffed to handle fabrication, assembly and delivery of high complexity ships up to 130 meter (425 ft) in length. The 130 meter (425 ft) by 62 meter (205 ft) building/launch ways are certified to MIL STD 1625(SH) requirements. The shipyard maintains moveable heavy-lift crane capacity of up to 272 metric tons.

The 4-story main fabrication shop contains 929 square meters (10,000 sq ft) and is fitted with a 5 metric ton overhead crane serving its entire length plus an extension at each end, and a 9 metric ton Gantry crane. The pipe shop covers 855 square meters (9,200 sq ft). The building is serviced by four 1-ton jibs and a 5 metric ton overhead crane and contains standard outfit of pipe fabrication tools and equipment, including six pipefitter work stations. The combined carpenter shop and electric shop contains 465 square meters (5,000 sq ft). The carpenter shop contains a joiner, band saw, radial arm saw and complete outfit of portable tools and equipment. The electric shop contains portable test equipment, meters and instruments for continuity and polarity checks, insulation resistance testing, cable installation tools and equipment and battery service facilities.

The main warehouse contains 1,858 square meters (20,000 sq ft) of modern receiving and weatherproof storage space. Environmentally controlled warehouse space for the stowage and test of sensitive equipment is available on site.

The HMP yard has a steel fabrication throughput capacity of 400 tons per month. The pipe shop has the capacity to provide up to 22,859 meters (75,000 linear ft) of pipe per year. The Paint Shop has the capacity to blast and paint over 363 metric tons of steel per month.

As of mid-1991, employment at Trinity's Halter Moss Point Division was 261.



7. Ingalls Shipbuilding, Inc.

The Ingalls Shipbuilding, Inc., a division of Litton Industries, Inc., is located on the Gulf of Mexico in Pascagoula, Mississippi. Ingalls is a diversified shipbuilding facility experienced in the construction, modernization, conversion, and overhaul of Navy warships and auxiliaries. Since 1975, Ingalls has designed, built and delivered to the Navy 55 major surface combatant ships.

As of October 1, 1991, the company held orders for five Aegis cruisers -- the last of which is scheduled for delivery in 1994. Other ships under contract were three Ingalls-designed multi-purpose amphibious assault ships (LHDs) for the Navy, as well as eight new DDG-51 class guided missile destroyers. In addition, Ingalls has a regular workload of Navy overhauls and repairs. The Ingalls backlog also includes three SA'AR corvettes for the Government of Israel.

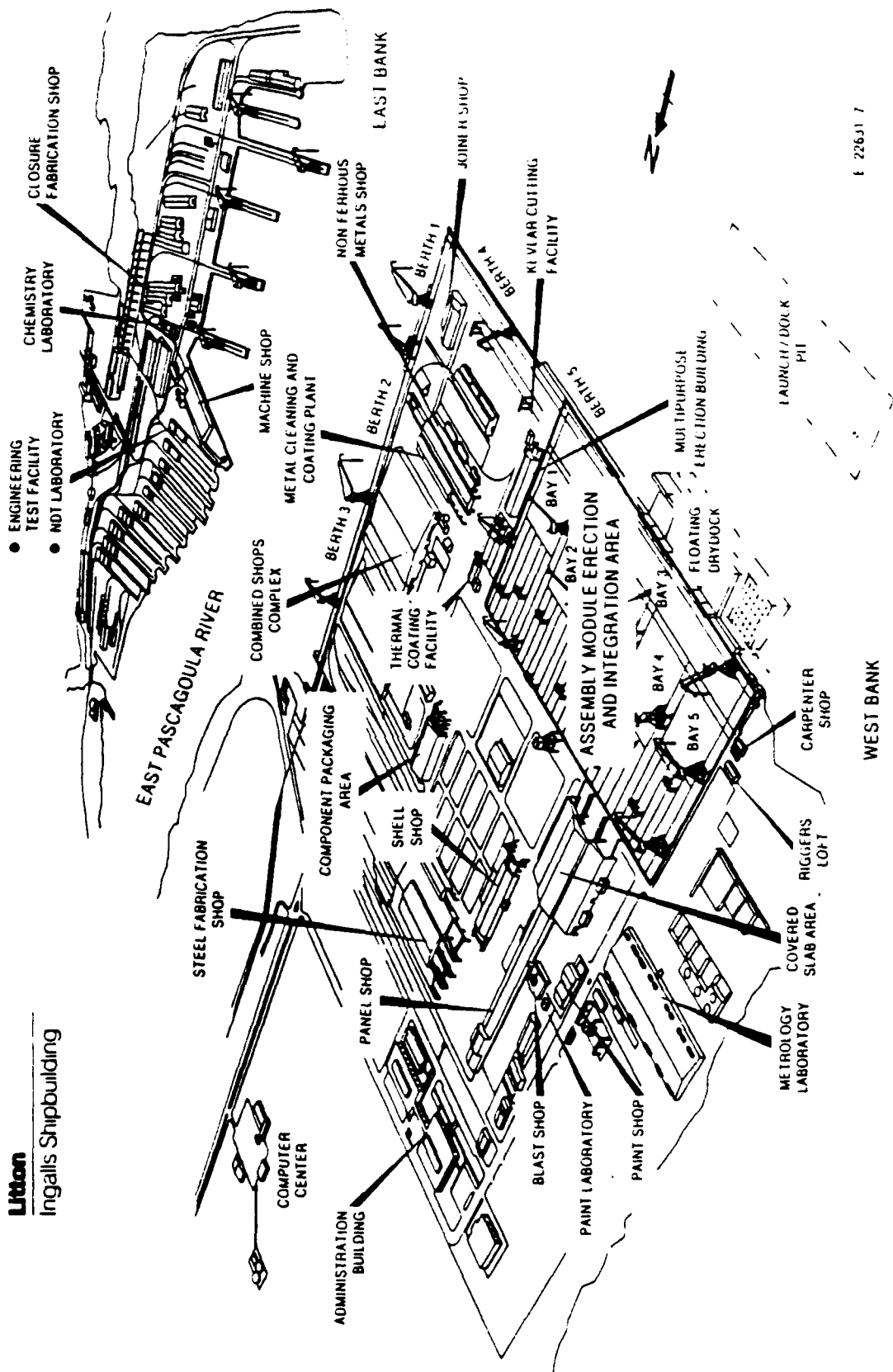
Ingalls 243 hectare (600 acre) West Bank facility, completed in 1970, does not have conventional inclined shipbuilding ways but is geared to assembly-line construction. Fabricated steel and subassemblies are brought from the various shops to the subassembly area where they are erected and pre-outfitted, then moved to the module assembly area. These areas are divided into five bays, each of which can produce 5,447 metric ton modules. After assembly and outfitting, the modules are moved to the integration area where they are erected into a complete ship. The ship is then moved to a floating drydock (resting on a submerged grid) which is subsequently floated and moved to a deep-water area where it is ballasted and the ship launched. The drydock can launch or recover a maximum ship size of 259 meters by 53 meters (850 ft by 173 ft). Approximately 1,432 meters (4,700 ft) of berthing space, serviced by cranes up to 272 metric tons, are available for outfitting. In August 1988, about 16,721 square meters (180,000 sq. ft) of the shipyard's slab area were brought under roof to increase the amount of early outfitting performed. Improved pipe production facilities, a machinery packaging facility, and a new blast and paint station in the steel fabrication complex have been added.

Ingalls's older East Bank facility has been in operation since 1938, engaged primarily in the construction of commercial cargo ships and tankers. Although there are six inclined shipways and a graving dock at East Bank, they were all taken out of service in 1989. Refurbishment of these facilities is anticipated to take at least two years. However, a wharf and four piers provide a total of 914 meters (3,000 ft) of berthing space serviced by cranes with up to 54 metric tons of capacity for outfitting and topside repair.

Ingalls Shipbuilding Division of Litton Industries at mid-1991 employed a total labor force of 15,531, up from 12,987 a year earlier.

**Litton**

**Ingalls Shipbuilding**



E 226J1 7

8. Marinette Marine Corporation

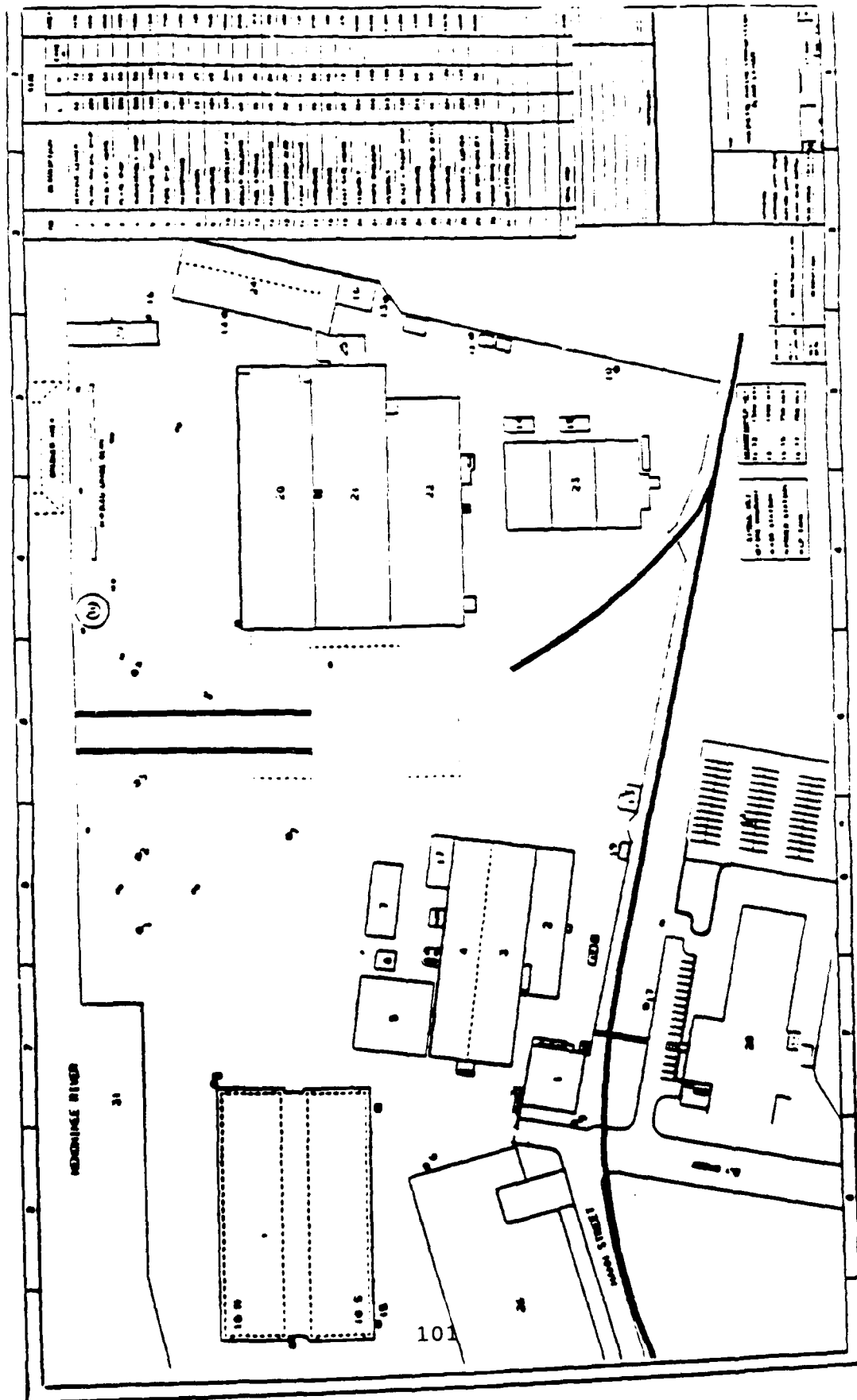
Marinette Marine Corporation is a privately-owned Great Lakes shipbuilding company founded during the early months of World War II and located in northeast Wisconsin. During the past 49 years, the yard has built nearly 1,300 vessels, including harbor tugs, research vessels, torpedo weapon retrievers, minehunters and yard patrol craft.

As of October 1, 1991, Marinette Marine was engaged in the construction of an Aids-to-Navigation (ATON) Barge for the U.S. Coast Guard. In addition, Marinette Marine held a contract for participating in the design competition for the Coast Guard's Ocean-Going Buoy Tenders (WLB). Earlier in 1991, Marinette Marine delivered two mine countermeasure vessels (MCMs) to the Navy and an additional ATON Barge to the U.S. Coast Guard.

The shipyard covers 23 hectares (57 acres) and has over 134,146 square meters (1.44 million sq. ft) of enclosed workspace permitting year-round, uninterrupted construction of vessels up to 122 meters (400 ft) in length overall with a beam of up to 20 meters (65 ft). Large fabrication shops and erection areas, a 200 metric ton shiplift, three launchways, and numerous berthing spaces along the 671 meter (2,200 ft) dockwall provide the facilities needed to construct multiple ships in assembly line fashion.

Marinette Marine's module construction method is complemented by separate cutting, fabricating, assembly, and trade shops allowing smooth and efficient movement of material and prefabricated components through the construction process. Many of the shops are equipped with overhead bridge cranes of up to 45 metric ton capacity; and multiple crawler cranes service the outdoor erection areas. Large modules and completed vessels are transferred and erected using a Dual Walking Beam ship transfer system.

Total employment at the yard in mid-1991 was 218, compared to 300 a year earlier.



MARINETTE MARINE CORPORATION

9. Merce Industries, Inc.

In January 1985, the Toledo-Lucas County Port Authority purchased this shipyard from The American Ship Building Company which owned the yard since 1947 and closed it in 1982. In September 1985, the yard was re-opened when Merce Industries, Inc., a 25-year old topside repair firm, entered into an agreement with the Port Authority to operate the shipyard for 25 years. Merce Industries, Inc. (Toledo Shipyard), is a complete, full-service shipyard, equipped for new construction, conversion and repair, including propeller repair.

Since Merce Industries, Inc., began operating the yard, they have made extensive repairs and have upgraded and renovated the facility, including the leveling of the old fit-out building adjacent to one of the drydocks, which improved access to the pier area between the graving docks and the wet slip area. Merce Industries elected not to lease the buildings immediately adjacent to the yard as the firm had existing facilities that were superior and in the nearby area. These existing facilities include a 4,645 square meter fabricating/propeller repair facility and a 1115 square meter machining and pressure vessel shop.

Complete facilities for propeller repair services in all alloys is available through the American Propeller Division.

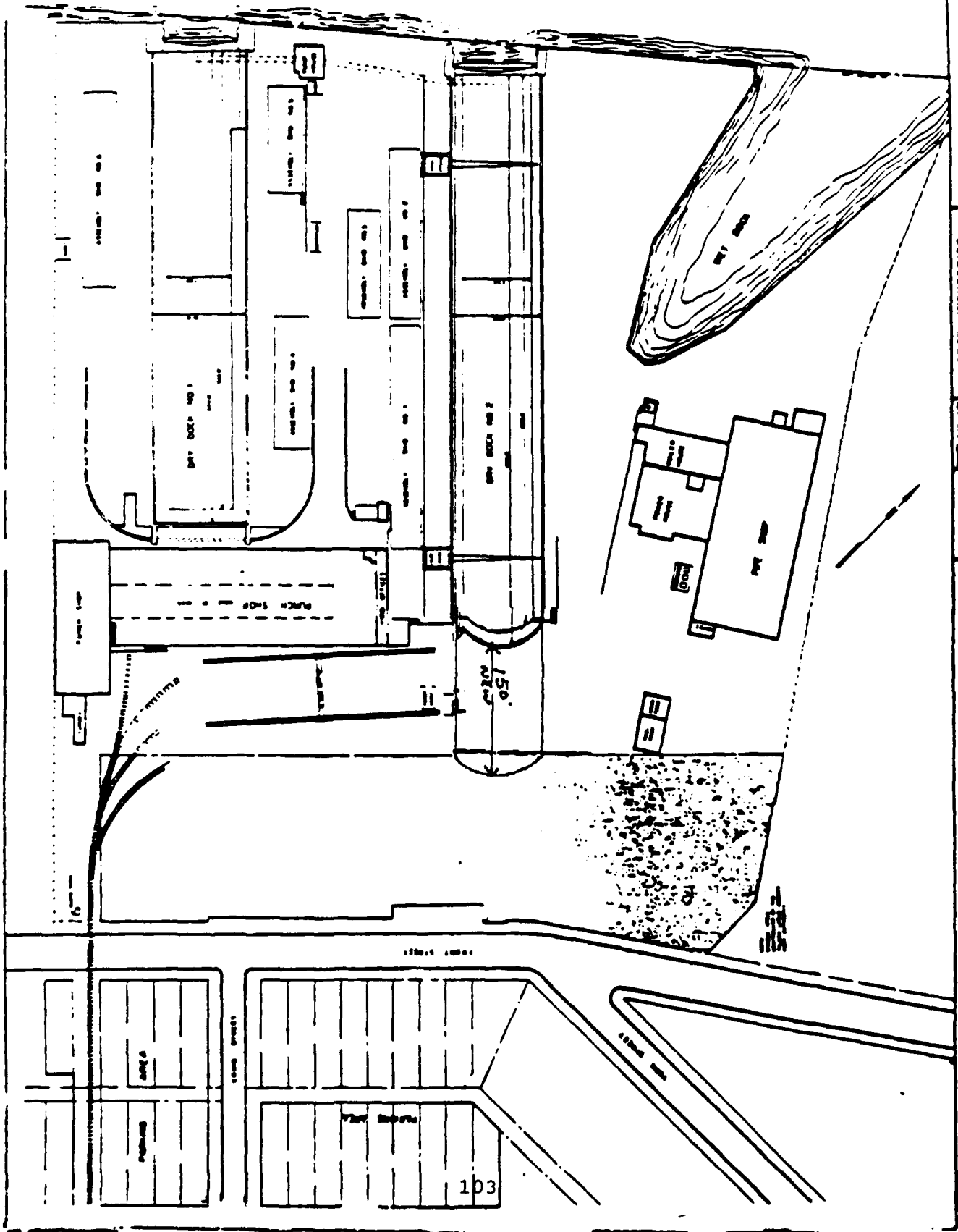
The company maintains two graving docks. One can accommodate vessels up to 207 meters by 24 meters (680 ft by 78 ft), and the other, vessels as large as 165 meters by 21 meters (540 ft by 68 ft). Usable berthing space totals about 488 meters (1,600 ft).

On December 17, 1986, Toledo Shipyard filed for protection under Chapter 11 of the U.S. bankruptcy code. In June 1988, the court approved a reorganization plan allowing a five-year repayment period.

As of mid-1991, employment at the shipyard totaled 60. Employment increases during the winter months as repair activity on the Great Lakes increases.

[ The Manitowoc Company, Inc., as of December 30, 1991, had acquired the assets of Merce Industries, Inc. In the future Merce Industries, same as Bay Shipbuilding, another component of Manitowoc, will not be involved in new construction, but will concentrate on repair and conversions in the marine industry. ]

MADISON RIVER



MECE INDUSTRIES

10-10-10

GENERAL

THE TOLEDO SHIPYARD

10. National Steel and Shipbuilding Company

National Steel and Shipbuilding Company (NASSCO), the largest shipbuilder on the West Coast, participates in both the commercial and the U.S. Navy shipbuilding, conversion, and repair markets. In the marine business since 1945, the company now occupies 59 hectares (145 acres) on the harbor in San Diego, California. In 1989, NASSCO became an employee-owned company.

In the past, NASSCO has constructed OBO carriers, very large crude carriers (VLCC) up to 209,000 dwt, product carriers, destroyer tenders, a large cable repair ship, special purpose ships and a variety of Navy vessels. NASSCO conversion projects have included the conversion of two 90,000 dwt tankers to 1,000-bed hospital ships (T-AH), three containerships to Maritime Prepositioning Ships (T-AKX), and the reconstruction of three former Sea-Land SL-7 containerships to Fast Sealift Ships (T-AKR) for the Navy. Repair and overhaul work during the past few years consisted principally of Navy contracts.

NASSCO has contracts to design and construct three AOE class Fast Combat Support Ships for the Navy. In January 1990, NASSCO was awarded a commercial contract to build a containership for the Matson Navigation Company. NASSCO recently completed major repairs of the VLCC, the EXXON VALDEZ. As of October 1, 1991, NASSCO was performing overhaul and repair work on three Navy vessels.

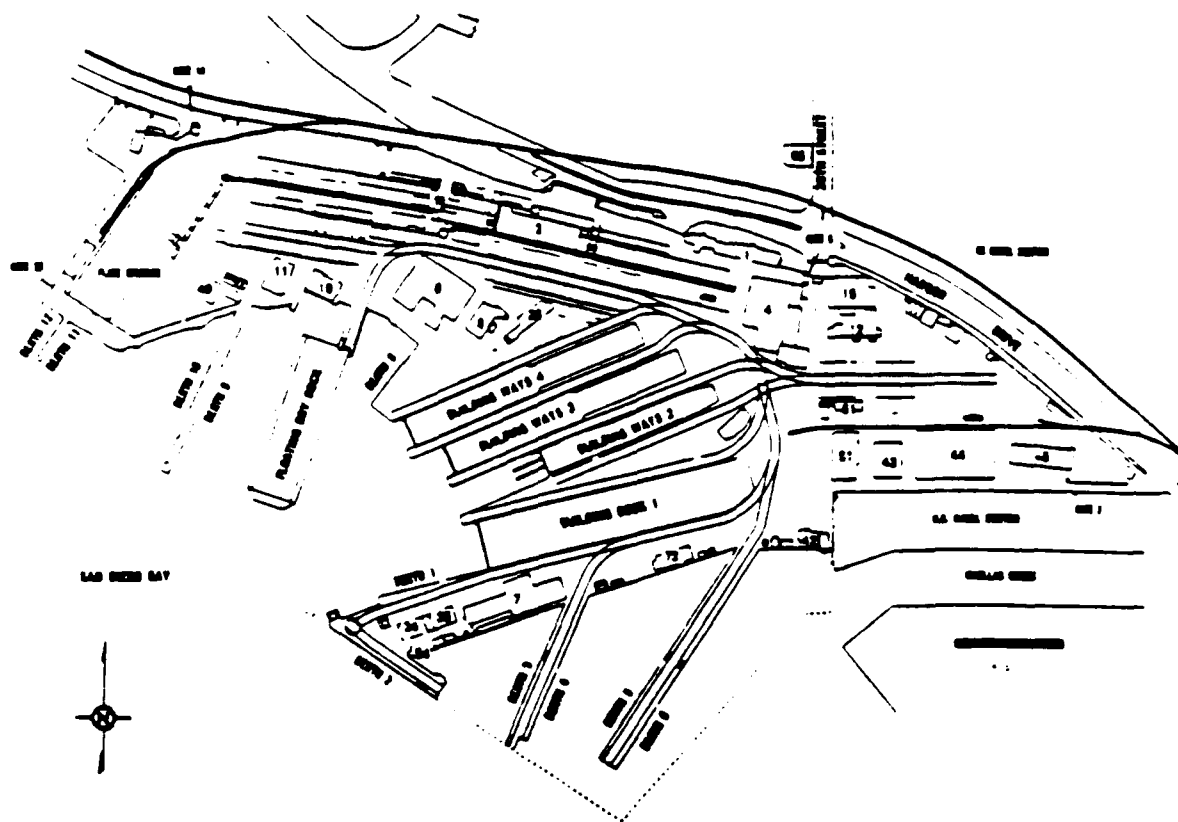
NASSCO's facilities include a building dock in which ships up to 299 meters by 52 meters (980 ft by 170 ft) can be constructed. In addition, the company operates three inclined building ways. Two of these can accommodate a maximum size ship of 274 meters by 34 meters (900 ft by 110 ft) and one a ship size of 210 meters by 27 meters (690 ft by 90 ft). Cranes are available that can provide lifts up to 159 metric tons. Berthing is available at 10 full-service berths that can accommodate ships with drafts up to 11 meters (35 ft) and lengths up to 305 meters (1,000 ft). NASSCO also operates a 25,400 metric ton floating drydock.

NASSCO has a full-service machine shop, carpenter shop, sheet metal shop and pipe shop with an automated pipe silo. The company's steel fabrication and assembly facilities, with a capacity of 1,816 metric tons per week, includes seven burning machines: one has a plasma arc and two have computer numerical control. Steel assembly facilities include a modern 16 meters (52 ft) panel line, eight assembly tables with a combined area of 11,472 square meters (123,500 sq. ft), a turning jig for curved steel blocks, and an enhanced pin jig area with two bridge cranes. There is also an automated line for blasting and priming steel plates and shapes. NASSCO offers full-service marine engineering and naval architecture, utilizing the latest technology such as Computer-Graphics Augmented Drafting and Manufacturing System (CADAM).

As of mid-1991 the total labor force was 3,931, down slightly from 3,950 in mid-1990.

# NASSCO SHIPYARD LAYOUT

Exhibit 10



## BLDG. NO.

- 1 ADMINISTRATION BUILDING
- 2 PLATE SHOP
- 4 PIPE SHOP
- 6 INSTRUMENT SHOP/MOTOR SHOP/REPAIR
- 7 SHEETMETAL SHOP/NEW CONSTRUCTION ELECTRICAL SHOP
- 8 MACHINE SHOP/REPAIR DEPARTMENT/ REPAIR PRODUCTION MANAGEMENT
- 11 REPAIR SHOP
- 12 MAINTENANCE/FACILITIES
- 15 ADMINISTRATION ANNEX
- 19 TOOL ROOM
- 28 PLANT OFFICE

## BLDG. NO.

- 34 GOVERNMENT TECHNICAL REPRESENTATIVE
- 38 SHIPS FORCE WORK AND STORAGE SUPPORT
- 40 COMBAT SYSTEMS SHOP
- 42 YARD CONFERENCE ROOM/SAFETY
- 43 WAREHOUSE
- 44 WAREHOUSE
- 45 WAREHOUSE
- 51 ENGINEERING
- 54 QUALITY ASSURANCE
- 60 CM-60
- 61 PAINT OFFICE
- 66 INFORMATION SYSTEMS
- 73 CARPENTER SHOP

## DOCKS AND WAYS

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| BUILDING DOCK 1<br>1000' x 178' | BUILDING WAYS 4<br>908' x 118'    |
| BUILDING WAYS 2<br>675' x 98'   | FLOATING DRY DOCK<br>585' x 170'  |
| BUILDING WAYS 3<br>908' x 118'  | (140' CLEAR<br>BETWEEN WINEWALLS) |

## BERTHS

- |                            |                             |
|----------------------------|-----------------------------|
| BERTH 1<br>600' x 30' Deep | BERTH 6<br>1000' x 35' Deep |
| BERTH 2<br>900' x 30' Deep | BERTH 7<br>150' x 23' Deep  |
| BERTH 3<br>580' x 30' Deep | BERTH 8<br>300' x 23' Deep  |
| BERTH 4<br>625' x 30' Deep | BERTH 9<br>700' x 28' Deep  |
| BERTH 5<br>950' x 35' Deep | BERTH 10<br>830' x 28' Deep |

11. Newport News Shipbuilding

Newport News Shipbuilding, located at the Port of Hampton Roads in Newport News, Virginia, is the largest shipbuilding complex in the United States. The company, founded in 1886, is a subsidiary of Tenneco, Inc. Newport News has built 25 aircraft carriers, 42 nuclear-powered submarines, and over 120 other surface ships for the U.S. Navy. Commercial vessels delivered by the yard include 71 cargo ships, 85 tankers, 61 passenger ships (most notably the famed superliner UNITED STATES), and more than 50 other self-propelled vessels. Newport News was a pioneer in the field of jumboizing ships, and since 1957 has completed 34 such operations. The last commercial vessel built in the yard was delivered in September 1983.

Newport News is the Nation's foremost builder of Navy nuclear warships. As of October 1, 1991, the yard was at work on three Nimitz class aircraft carriers and 9 attack submarines. Overhaul and repair of nuclear-powered submarines and surface ships for the Navy are also a principal activity at Newport News.

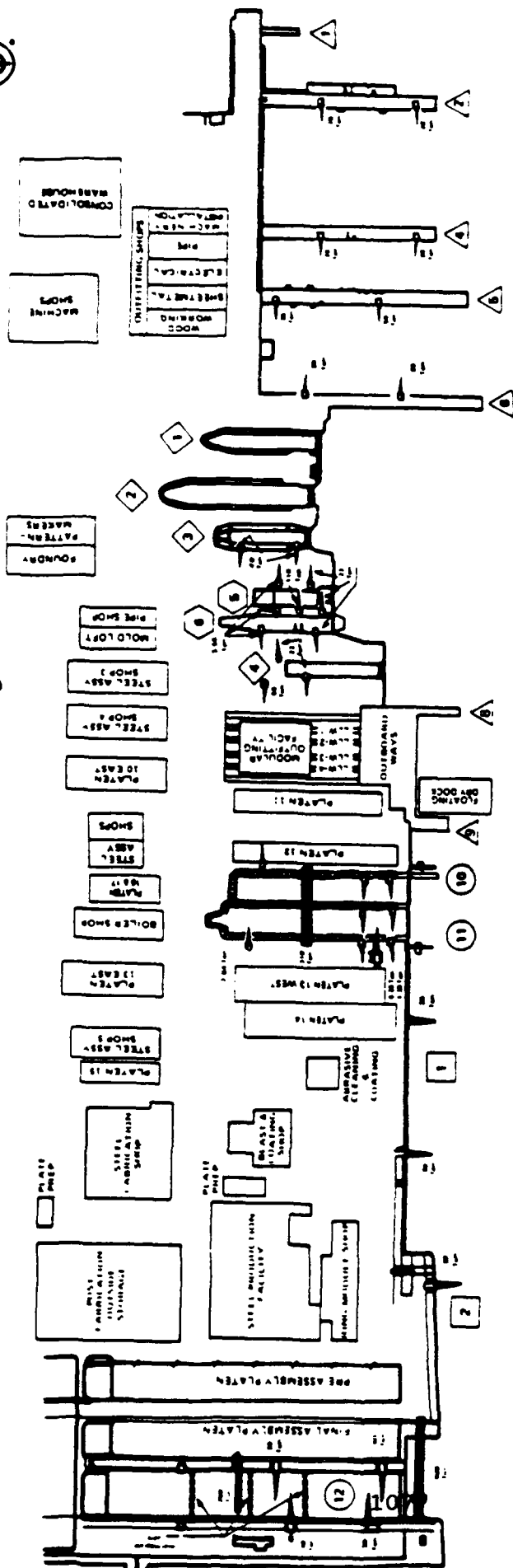
Included in Newport News major facilities are:

Docks and Shipways - There are eight separate docking facilities. Shipway 12, the largest building basin in the nation, is 492 meters (1,613 ft) long, 76 meters (250 ft) wide, and 10 meters (33 ft) deep. Three positions for the intermediate gate expand the multi-ship construction capability of this dock, permitting simultaneous ship construction and repair. A 900 metric ton gantry crane, one of the largest in the world, can handle completely outfitted assemblies. This crane has a height of 71 meters (234 ft) overall, a girder clearance of 61 meters (200 ft) and a span between rail centers of 165 meters (540 ft). Shipways 10 and 11 are used for construction work, as well as overhaul and repair, and are serviced by a 315 metric ton gantry crane. The other four graving docks (Dry Docks 1-4) are used mainly for ship repair and overhaul work. The floating drydock, which is 195 meters by 43 meters (640 ft by 140 ft), is primarily used as a part of the submarine land level facility.






Vessel Berthing - Newport News has two outfitting berths totaling 799 meters (2,620 ft) each serviced by 30 metric ton cranes. There are six piers totaling 3,353 meters (11,000 ft) serviced by cranes with capacities of up to 45 metric tons in addition to the two small piers included with the submarine land level facility.

Submarine Construction and Repair Complex - This land level facility is currently being used for construction of nuclear attack submarines. It includes a modular outfitting facility (MOF), outboard ways, two small piers, a transporter and transfer system, and a floating drydock.

The labor force at Newport News in mid-1991 was about 27,000, compared to 26,000 a year earlier.



## James River

Only One	Only	Not	Not One Only	Outstanding
				

**NOT TO SCALE**

## INCLINED SHIPWAYS

Length	Width		Water Depth (m/W)		Length	Width	Length	Width	Water Depth (m/w)
	A1 Entrance Pier	Entrance Bulkhead	Chim Bulkhead	Chim					
440	20	9.7	3.2	7.0					
460	20	10.0	3.1	7.0 (at A1)	Stage 5	20			
480	21	10.3	3.1	7.0	Stage 6	20			
500	22	10.6	3.2	7.0					
520	23	10.9	3.3	7.0					
540	24	11.2	3.4	7.0					
560	25	11.5	3.5	7.0					
580	26	11.8	3.6	7.0					
600	27	12.1	3.7	7.0					
620	28	12.4	3.8	7.0					
640	29	12.7	3.9	7.0					
660	30	13.0	4.0	7.0					
680	31	13.3	4.1	7.0					
700	32	13.6	4.2	7.0					
720	33	13.9	4.3	7.0					
740	34	14.2	4.4	7.0					
760	35	14.5	4.5	7.0					
780	36	14.8	4.6	7.0					
800	37	15.1	4.7	7.0					
820	38	15.4	4.8	7.0					
840	39	15.7	4.9	7.0					
860	40	16.0	5.0	7.0					
880	41	16.3	5.1	7.0					
900	42	16.6	5.2	7.0					
920	43	16.9	5.3	7.0					
940	44	17.2	5.4	7.0					
960	45	17.5	5.5	7.0					
980	46	17.8	5.6	7.0					
1000	47	18.1	5.7	7.0					
1020	48	18.4	5.8	7.0					
1040	49	18.7	5.9	7.0					
1060	50	19.0	6.0	7.0					
1080	51	19.3	6.1	7.0					
1100	52	19.6	6.2	7.0					
1120	53	19.9	6.3	7.0					
1140	54	20.2	6.4	7.0					
1160	55	20.5	6.5	7.0					
1180	56	20.8	6.6	7.0					
1200	57	21.1	6.7	7.0					
1220	58	21.4	6.8	7.0					
1240	59	21.7	6.9	7.0					
1260	60	22.0	7.0	7.0					
1280	61	22.3	7.1	7.0					
1300	62	22.6	7.2	7.0					
1320	63	22.9	7.3	7.0					
1340	64	23.2	7.4	7.0					
1360	65	23.5	7.5	7.0					
1380	66	23.8	7.6	7.0					
1400	67	24.1	7.7	7.0					
1420	68	24.4	7.8	7.0					
1440	69	24.7	7.9	7.0					
1460	70	25.0	8.0	7.0					
1480	71	25.3	8.1	7.0					
1500	72	25.6	8.2	7.0					
1520	73	25.9	8.3	7.0					
1540	74	26.2	8.4	7.0					
1560	75	26.5	8.5	7.0					
1580	76	26.8	8.6	7.0					
1600	77	27.1	8.7	7.0					
1620	78	27.4	8.8	7.0					
1640	79	27.7	8.9	7.0					
1660	80	28.0	9.0	7.0					
1680	81	28.3	9.1	7.0					
1700	82	28.6	9.2	7.0					
1720	83	28.9	9.3	7.0					
1740	84	29.2	9.4	7.0					
1760	85	29.5	9.5	7.0					
1780	86	29.8	9.6	7.0					
1800	87	30.1	9.7	7.0					
1820	88	30.4	9.8	7.0					
1840	89	30.7	9.9	7.0					
1860	90	31.0	10.0	7.0					
1880	91	31.3	10.1	7.0					
1900	92	31.6	10.2	7.0					
1920	93	31.9	10.3	7.0					
1940	94	32.2	10.4	7.0					
1960	95	32.5	10.5	7.0					
1980	96	32.8	10.6	7.0					
2000	97	33.1	10.7	7.0					
2020	98	33.4	10.8	7.0					
2040	99	33.7	10.9	7.0					
2060	100	34.0	11.0	7.0					
2080	101	34.3	11.1	7.0					
2100	102	34.6	11.2	7.0					
2120	103	34.9	11.3	7.0					
2140	104	35.2	11.4	7.0					
2160	105	35.5	11.5	7.0					
2180	106	35.8	11.6	7.0					
2200	107	36.1	11.7	7.0					
2220	108	36.4	11.8	7.0					
2240	109	36.7	11.9	7.0					
2260	110	37.0	12.0	7.0					
2280	111	37.3	12.1	7.0					
2300	112	37.6	12.2	7.0					
2320	113	37.9	12.3	7.0					
2340	114	38.2	12.4	7.0					
2360	115	38.5	12.5	7.0					
2380	116	38.8	12.6	7.0					
2400	117	39.1	12.7	7.0					
2420	118	39.4	12.8	7.0					
2440	119	39.7	12.9	7.0					
2460	120	40.0	13.0	7.0					
2480	121	40.3	13.1	7.0					
2500	122	40.6	13.2	7.0					
2520	123	40.9	13.3	7.0					
2540	124	41.2	13.4	7.0					
2560	125	41.5	13.5	7.0					
2580	126	41.8	13.6	7.0					
2600	127	42.1	13.7	7.0					
2620	128	42.4	13.8	7.0					
2640	129	42.7	13.9	7.0					
2660	130	43.0	14.0	7.0					
2680	131	43.3	14.1	7.0					
2700	132	43.6	14.2	7.0					
2720	133	43.9	14.3	7.0					
2740	134	44.2	14.4	7.0					
2760	135	44.5	14.5	7.0					
2780	136	44.8	14.6	7.0					
2800	137	45.1	14.7	7.0					
2820	138	45.4	14.8	7.0					
2840	139	45.7	14.9	7.0					
2860	140	46.0	15.0	7.0					
2880	141	46.3	15.1	7.0					
2900	142	46.6	15.2	7.0					
2920	143	46.9	15.3	7.0					
2940	144	47.2	15.4	7.0					
2960	145	47.5	15.5	7.0					
2980	146	47.8	15.6	7.0					
3000	147	48.1	15.7	7.0					
3020	148	48.4	15.8	7.0					
3040	149	48.7	15.9	7.0					
3060	150	49.0	16.0	7.0					
3080	151	49.3	16.1	7.0					
3100	152	49.6	16.2	7.0					
3120	153	49.9	16.3	7.0					
3140	154	50.2	16.4	7.0					
3160	155	50.5	16.5	7.0					
3180	156	50.8	16.6	7.0					
3200	157	51.1	16.7	7.0					
3220	158	51.4	16.8	7.0					
3240	159	51.7	16.9	7.0					
3260	160	52.0	17.0	7.0					
3280	161	52.3	17.1	7.0					
3300	162	52.6	17.2	7.0					
3320	163	52.9	17.3	7.0					
3340	164	53.2	17.4	7.0					
3360	165	53.5	17.5	7.0					
3380	166	53.8	17.6	7.0					
3400	167	54.1	17.7	7.0					
3420	168	54.4	17.8	7.0					
3440	169	54.7	17.9	7.0					
3460	170	55.0	18.0	7.0					
3480	171	55.3	18.1	7.0					
3500	172	55.6	18.2	7.0					
3520	173	55.9	18.3	7.0					
3540	174	56.2	18.4	7.0					
3560	175	56.5	18.5	7.0					
3580	176	56.8	18.6	7.0					
3600	177	57.1	18.7	7.0					
3620	178	57.4	18.8	7.0					
3640	179	57.7	18.9	7.0					
3660	180	58.0	19.0	7.0					
3680	181	58.3	19.1	7.0					
3700	182	58.6	19.2	7.0					
3720	183	58.9	19.3	7.0					
3740	184	59.2	19.4	7.0					
3760	185	59.5	19.5	7.0					
3780	186	59.8	19.6	7.0					
3800	187	60.1	19.7	7.0					
3820	188	60.4	19.8	7.0					
3840	189	60.7	19.9	7.0					
3860	190	61.0	20.0	7.0					
3880	191	61.3	20.1	7.0					
3900	192	61.6	20.2	7.0					
3920	193	61.9	20.3	7.0					
3940	194	62.2	20.4	7.0					
3960	195	62.5	20.5	7.0					
3980	196	62.8	20.6	7.0					
4000	197	63.1	20.7	7.0					
4020	198	63.4	20.8	7.0					
4040	199	63.7	20.9	7.0					
4060	200	64.0	21.0	7.0					
4080	201	64.3	21.1	7.0					
4100	202	64.6	21.2	7.0					
4120	203	64.9	21.3	7.0					
4140	204	6							

12. Peterson Builders Incorporated

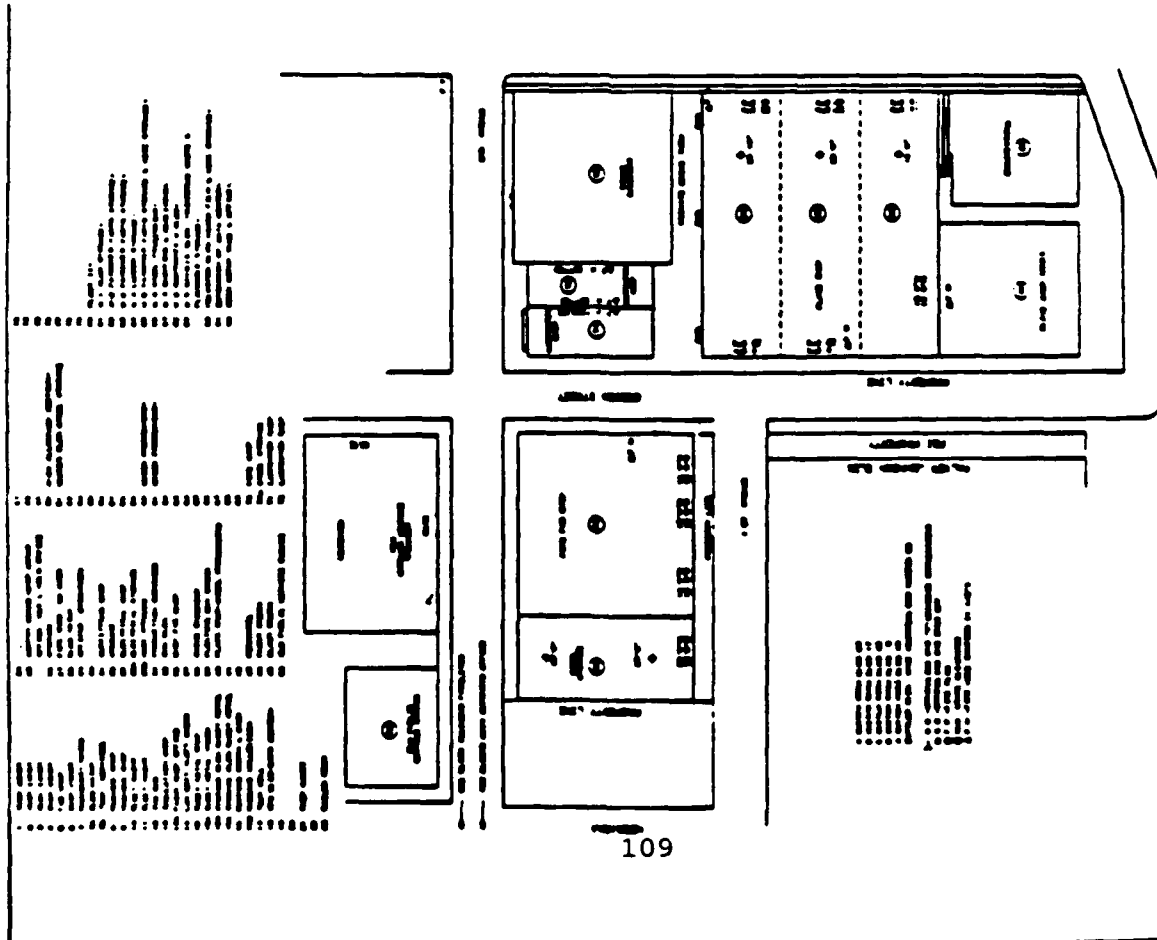
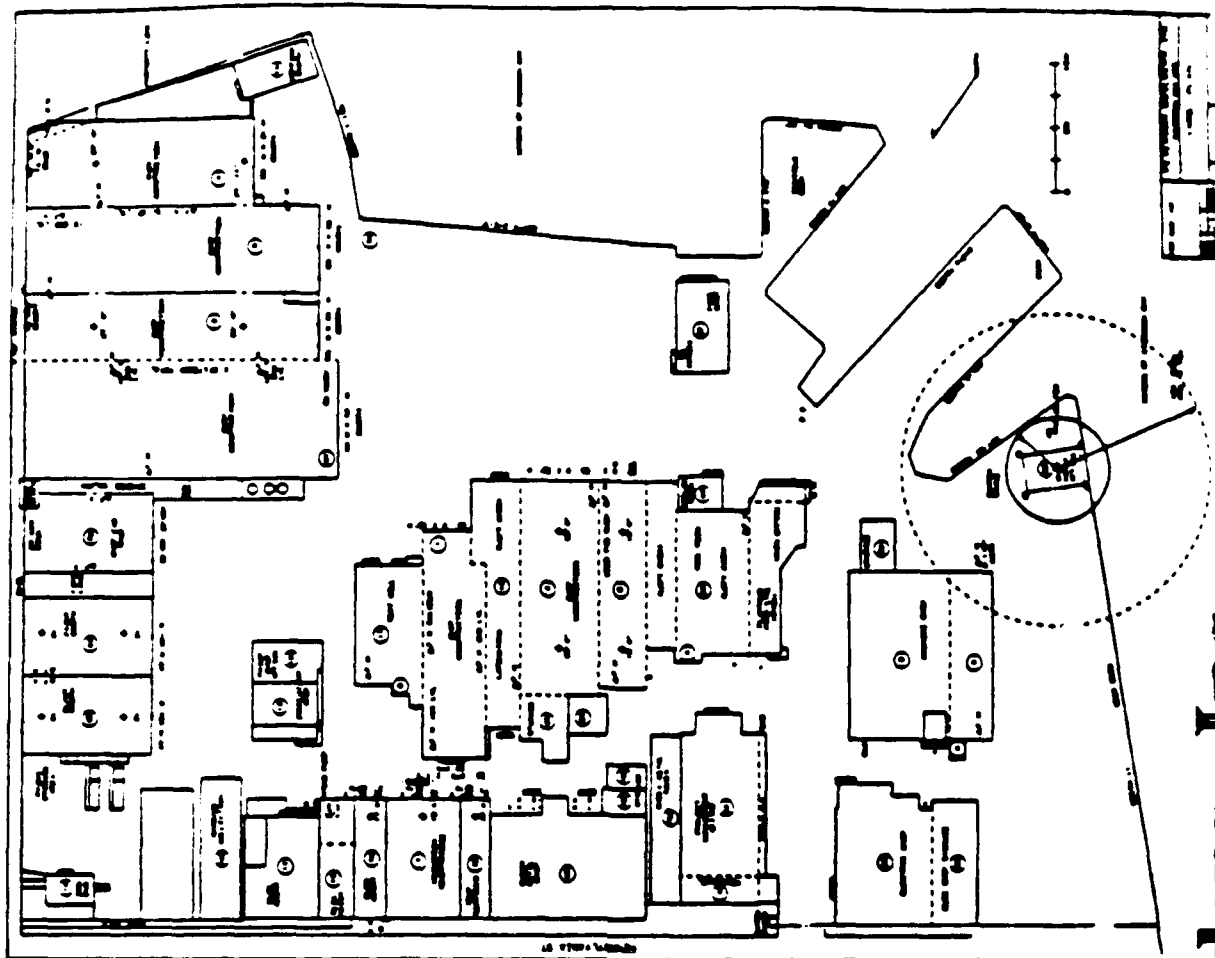
Peterson Builders, Inc. (PBI), of Sturgeon Bay, Wisconsin, established in 1933, is a privately owned, full service, construction and repair shipyard, which serves the government, commercial and service industries. The shipyard offers construction capabilities in wood, steel, fiberglass and aluminum, as well as design and production expertise. Their continuing backlog of ship construction, complemented by conversion, repair, and special projects of unique assembly fabrications, enables PBI to maintain a skilled labor force and to keep pace with the latest technologies and developments in the industry.

The main yard, with about 3 hectares (7 acres) of buildings, provides inside construction and production facilities; total area is about 5 hectares (13 acres). Extensive waterfront facilities provide berthing for vessels up to 274 meters (900 ft) in length. PBI operates two side launching shipways; one can accommodate a maximum ship length of 152 meters (500 ft) and the other 69 meters (225 ft). Also, inside ship construction capabilities for vessels up to 70 meters by 18 meters (230 ft by 60 ft) are available. PBI's floating drydock has the capacity to accommodate a vessel up to 110 meters by 12 meters (360 ft by 40 ft) and is Navy-certified for 1,118 metric tons.

Current construction contracts underway at PBI are for six wooden 68-meter (224 ft) Mine Countermeasure Ships (MCMs) for the U.S. Navy. As part of the Navy's mine warfare renewal program, these MCMs will replace ships in service since the early 1950's. PBI has been a leader in mine craft construction since that time; longer than any other shipyard in the world. This new generation of wooden ships being built at PBI are not the only "first of a kind" contracts awarded to the yard. Other "new class of ship" construction contracts completed for the U.S. Navy are four steel 69-meter (255 ft) ARS Auxiliary Rescue/Salvage ships and seven wooden 33-meter (108 ft) YP Yard Patrol craft. PBI also maintains a long-standing history for commercial vessel construction ranging from super tuna seiners, research ships, large passenger/car ferries, and a range of tugs.

During 1991, Peterson Builders received contracts for the overhaul and repair of a 23-meter (77 ft) Fire Boat for the city of Detroit, a 15-meter (50 ft) EPA boat, and modifications to a 23-meter (75 ft) excursion boat. Two 55-meter (180 ft) U.S. Coast Guard Buoy Tenders were drydocked and sea chests coated.

At mid-1991, the company's average total employment was about 990, compared to 1,000 in 1990.



**AB Peterson Builders, Inc.**

13. Portland Ship Repair Yard

The Portland Ship Repair Yard is part of the Municipal Corporation of the Port of Portland. The 57-hectare (140 acre) shipbuilding and ship repair facility is located in Portland, Oregon, on the Willamette River. The yard was developed from the World War II Swan Island Shipbuilding facilities which delivered 1,076 oceangoing ships.

During 1990, projects undertaken by contracted users of the yard included the reduction in deadweight capacity of an oil tanker from 165,000 tons to 125,000 tons by removing a 17-meter (55 ft) section of the ship and construction and load-out of \$75 million worth of gas handling modules for the North Slope oil fields.

The shipbuilding assets are augmented by the individual facility users' assets. Cascade General, Inc., Northwest Marine Inc., and West State, Inc., are contracted users of the facility.

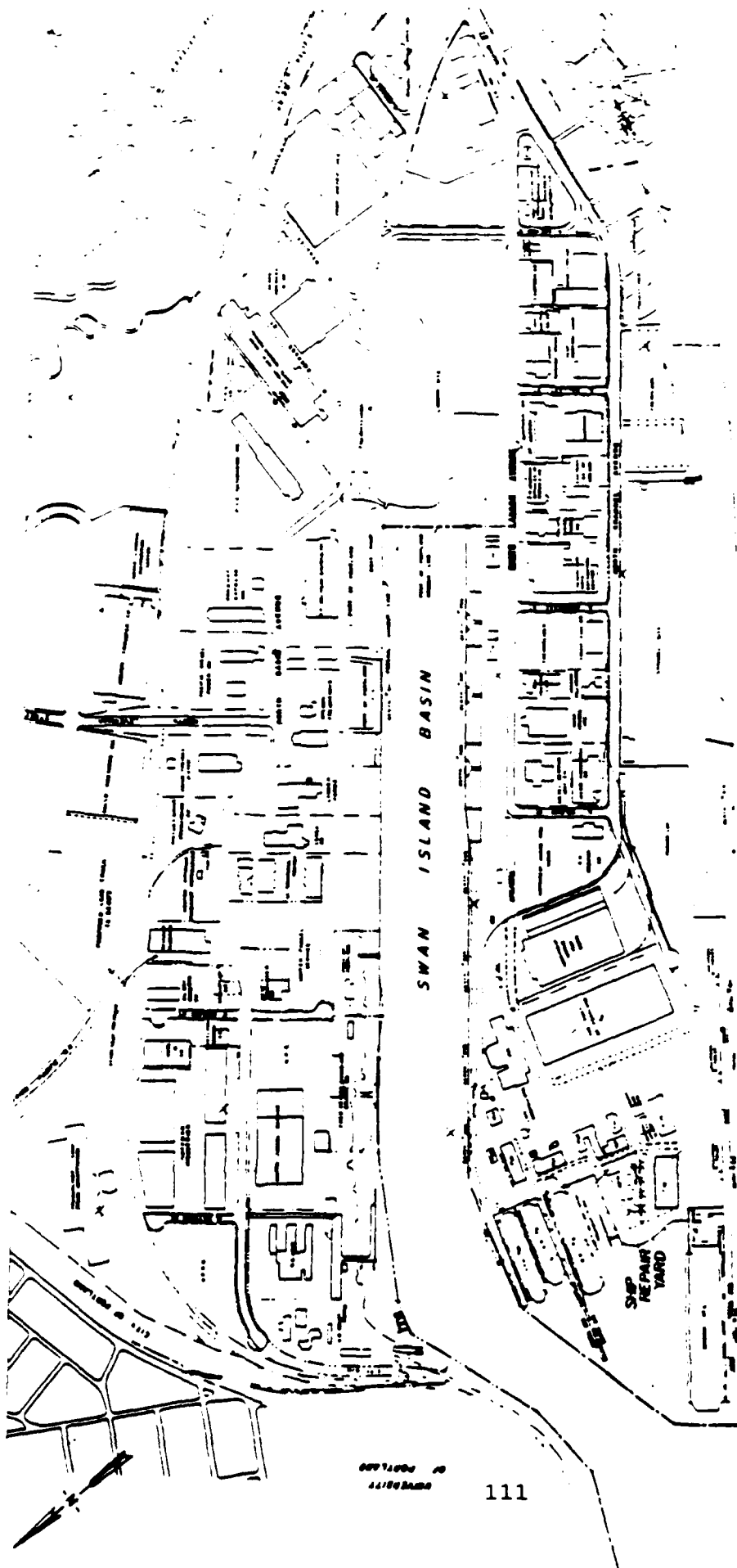
The shipbuilding facilities at the Portland Ship Repair Yard are capable of producing modular-type units from 1,525 to 5,084 metric tons. Units are transported by rubber-tired vehicles, crawler or walker, via a launching bridge to two locations. At one ship construction location, a vessel 145 meters by 30 meters (475 ft by 100 ft) can be constructed using the No. 3 drydock for launching. At the other location, a vessel up to 247 meters by 33 meters (810 ft by 108 ft) can be constructed using the No. 3 and No. 4 drydocks for launching.

Portland Ship Repair Yard operates three drydocks. The largest two (No. 3 and No. 4) can accommodate vessels up to 247 meters by 33 meters (810 ft by 108 ft), and 351 meters by 55 meters (1,150 ft by 181 ft), respectively. A total of 3,078 meters (10,100 ft) of fully serviced pier space with 16 whirley type cranes are employed for outfitting. In 1986, a new layberth facility (Berth 315) was added which can accommodate two 335-meter (1,100-foot) VLCCs in lay-up status.

The yard has 46,447 square meters (500,000 sq. ft) of fully-enclosed service shops and warehouse space. The 11 module assembly bays are 98 meters (323 ft) long, 21 meters (70 ft) wide (clear), and 18 meters (60 ft) high (clear).

The Portland Ship Repair Yard is preparing to expand its modular construction capability by an additional 14 hectares (34 acres), located in the Swan Island Basin. This facility will be suitable for constructing ship modules.

As of mid-1991 the shipyard employed 3,135 persons, unchanged from mid-1990.



PORT OF PORTLAND  
OREGON

14. Tacoma Boatbuilding Company

In operation since 1926 in Tacoma, Washington, this shipyard has designed, constructed, and repaired vessels for commercial customers, the Navy and Coast Guard, and foreign governments. Tacoma Boat's overall facilities consist of two yards covering over 12 hectares (30 acres) of company-owned or leased property located adjacent to the Commencement Bay industrial complex.

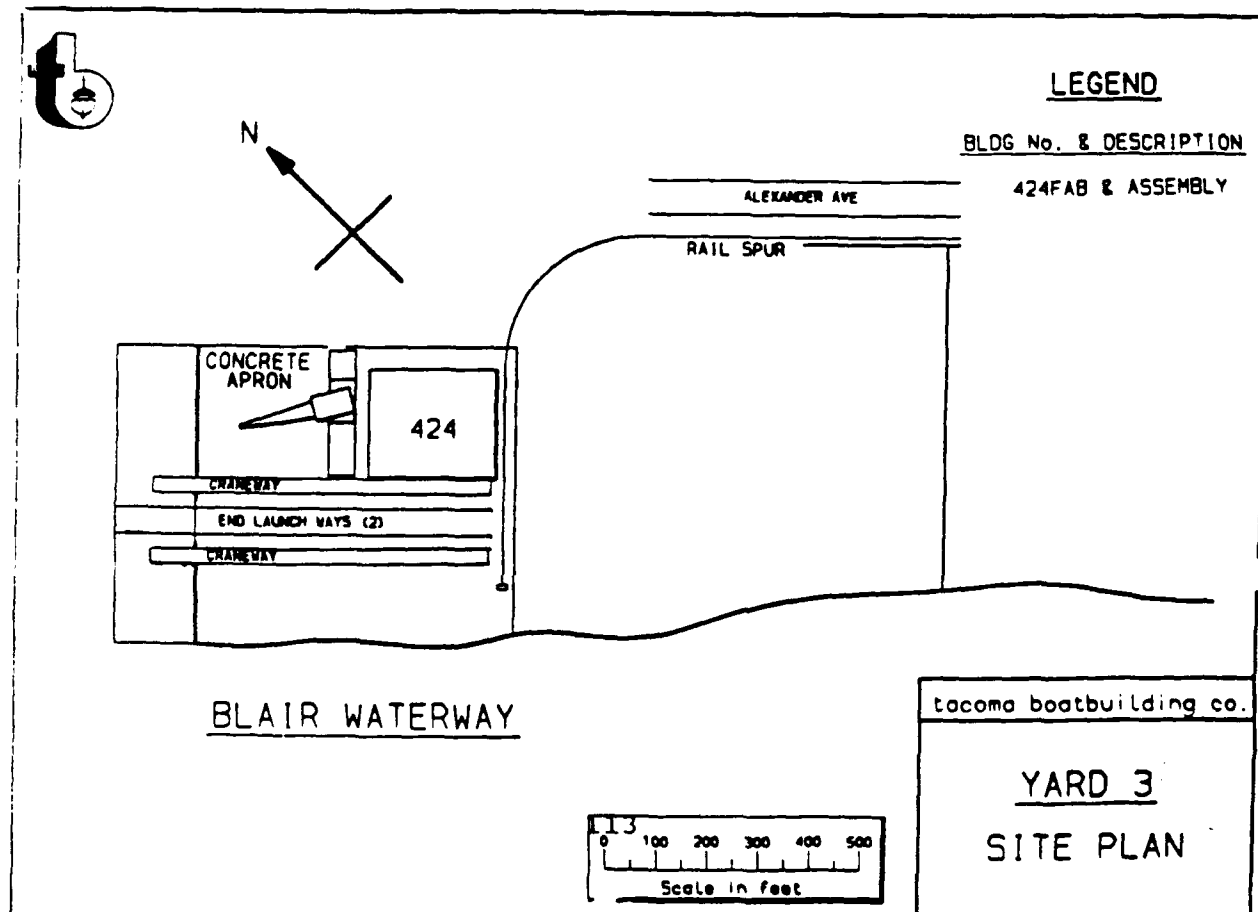
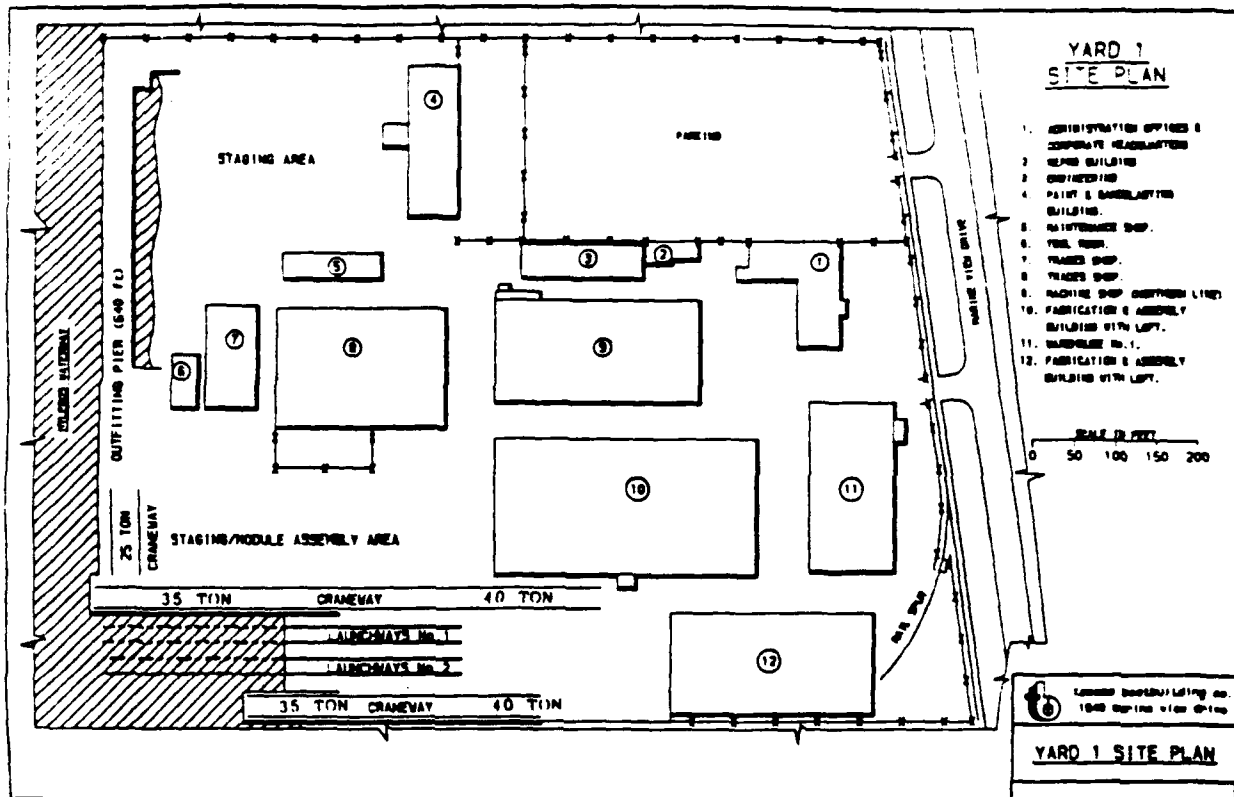
Tacoma Boat has grown continuously through the years, producing a diversified construction pattern including a variety of standard-class tuna purseiners, a semi-submersible offshore oil-drilling rig, barges and tug/supply vessels for the offshore oil industry, WYTM icebreaking tugs and WMEC cutters 82-meter (270 ft) long for the Coast Guard, revolutionary-design tractor tugs, and high-speed patrol ships, gunboats, and minesweepers for the Navy and/or foreign governments. The company also helped design and build an 80-knot surface effect ship (SES).

During the 1984 to mid-1991 period, Tacoma delivered 12 ocean surveillance ships (T-AGOS) to the U.S. Navy. This T-AGOS contract was a focal point for zone outfitting in which various portions or "zones" of a ship were built separately as virtually complete units and then assembled at the launchway.

The Company is working under a contract with the Republic of China to supply engineering design and technical assistance, as well as material, equipment and machinery for two 82-meter (270 ft) Customs Preventative ships being constructed in Taiwan. The Company is also working under a contract with the Government of Egypt for the modernization of four Romeo-C Class submarines. This project includes the upgrading of the navigation, communications, electronic sensors and weapon systems and will be accomplished by the Company at the Egyptian Naval facilities in Alexandria, Egypt.

Tacoma Boat's facilities include four end-launch construction ways, the largest of which can construct vessels up to 131 meters by 15 meters (430 ft by 50 ft). Available for outfitting and repair work are 411 meters (1,350 ft) of berthing space.

The total work force at Tacoma Boat at mid-1991 was 88, compared to 420 a year earlier.



15. Tampa Shipyards, Incorporated

Founded in 1948, Tampa Shipyards, Inc., (formerly Tampa Ship Repair and Drydock Co.) is a full-service yard which was purchased by The American Ship Building Company in 1972 and is located on the recently deepened 13-meter (43 ft) Sparkman Channel in Tampa, Florida.

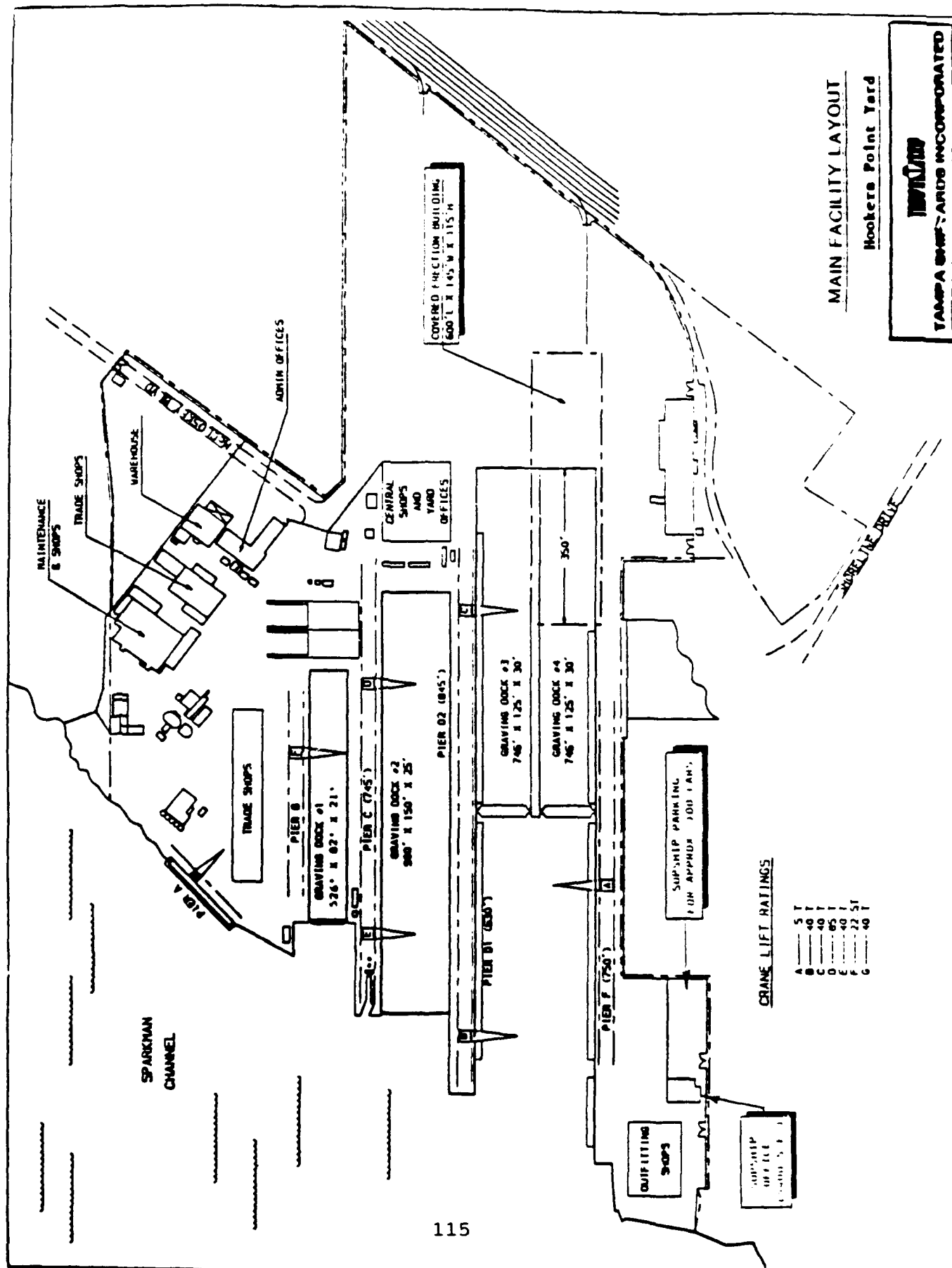
During World War II, the company built Navy auxiliary vessels and C2 cargo ships for the Maritime Commission. Since World War II, Tampa Ship has been a major Gulf Coast repair yard. During the 1980's significant projects completed by Tampa Ship included the conversion of four Moore-McCormack C4 cargo ships to larger self-sustaining breakbulk/container vessels and the construction of five 30,000 dwt clean-product, ice-strengthened tankers for charter to the Military Sealift Command.

During 1989, Tampa Shipyards completed the conversion of two freighters to auxiliary crane ships, T-ACS 7 and 8, for the U.S. Navy. Work is currently underway on the completion of two T-AO fleet oilers, BENJAMIN ISHERWOOD and HENRY ECKFORD, which were originally contracted to Pennsylvania Shipbuilding Company in 1985.

Major facility installations were integrated into Tampa's ship construction program in 1984. The additions include: a concrete pier, two graving docks, two wet berths, additional shops, and an erection/assembly building. The erection/assembly building is 183 meters by 44 meters by 35 meters (600 ft by 145 ft by 115 ft), and is serviced by three overhead bridge cranes with a combined lifting capacity of 800 metric tons. About 107 meters (350 ft) of this building straddles one of the graving docks, allowing pre-assembled units weighing in excess of 608 metric tons to be erected in a totally enclosed environment. The company currently has four graving docks operational. The largest can handle ships up to 273 meters by 45 meters (896 ft by 146 ft). Two of the drydocks can accommodate a vessel as large as 226 meters by 32 meters (742 ft by 106 ft).

To provide additional fabricating capability, Tampa Ship has purchased the Westinghouse heavy steel fabricating facility on Tampa's Westshore Blvd. This facility provides over 4 hectares (11 acres) of covered fabrication floor, bridge cranes up to 635-metric ton capacity, and barge loading facilities. The building is two hours by tow from Tampa Ship. This heavy steel fabricating facility is now referred to as the Westshore Facility. In addition, Tampa Ship currently leases two wet berths north of the main yard at South Slip. These wet berths are 256 meters (840 ft) and 213 meters (700 ft) long.

As of mid-1991, 1,142 people were on the Tampa payroll compared to 830 in mid-1990.



16. Todd Pacific Shipyards Corporation - Seattle Division

Todd's Seattle Division is located at the northwest corner of Harbor Island in Elliot Bay, less than 10 minutes from downtown Seattle, Washington. From 1898 until 1916, when the William H. Todd Company of New York bought the shipyard from the Seattle Construction and Drydock Company, a variety of vessels were produced, including the world's finest six-masted barkentine and (at that time) the world's fastest single-screw steamer. This 21-hectares (52 acre) yard has been a prime supplier of fighting ships for the Navy. During World War II, Todd-Seattle constructed over 125 ships and repaired and serviced some 2,700 deep draft vessels of all sizes, types, and flags. Since 1952, the yard has built 80 vessels of 20 different types.

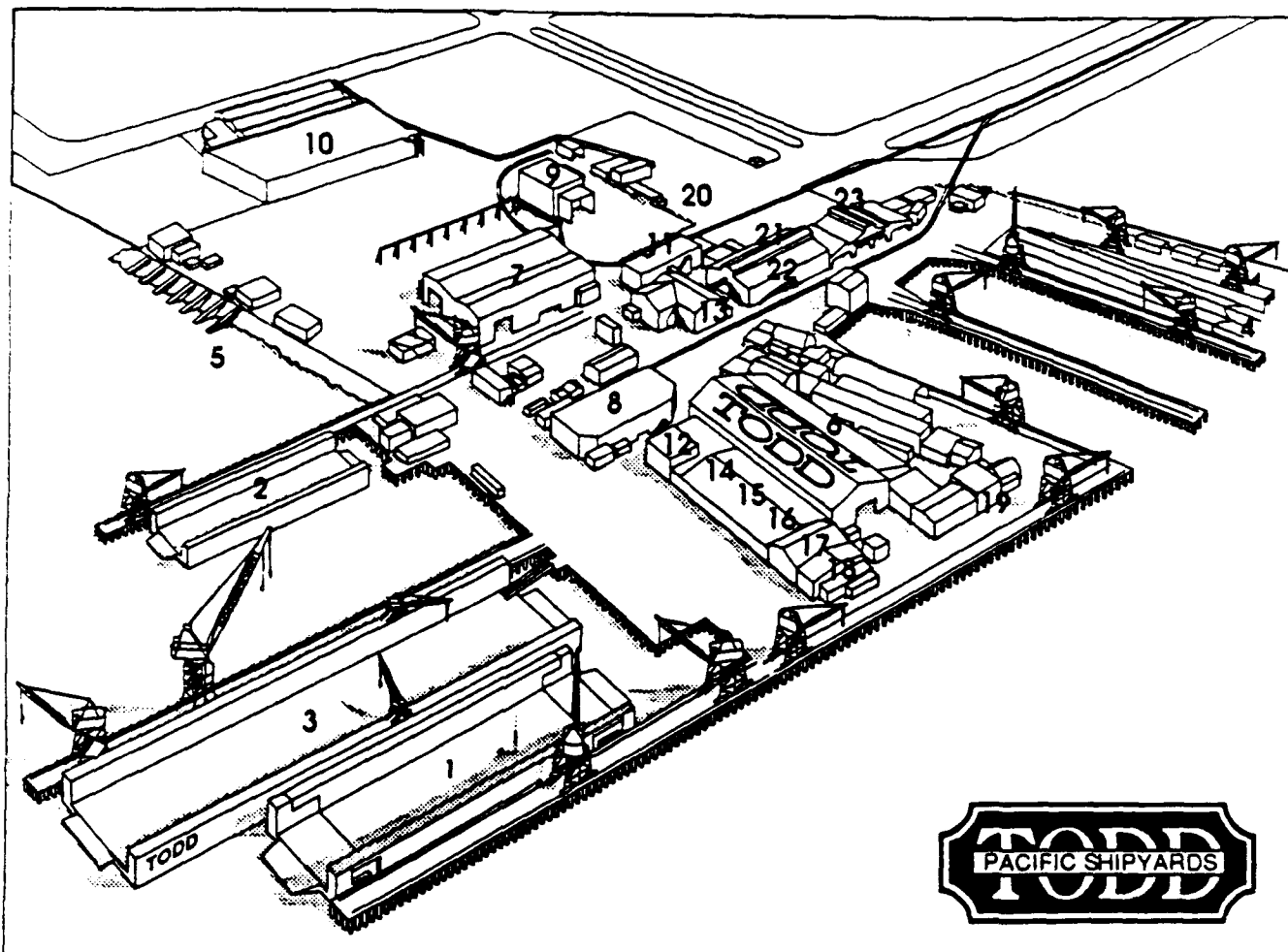
As of October 1, 1991, work in the yard included the modernization of eight Hamilton class Coast Guard cutters with the last scheduled for redelivery in April 1992. This yard has an active ship repair and overhaul operation that annually works on a large number of commercial and naval vessels.

The largest building way at Todd-Seattle can handle a ship up to 183 meters by 29 meters (600 ft by 96 ft). It can also be used as a dual launchway for simultaneous construction of two ships with beams of 15 meters (50 ft) or less. A small side-launch building way is also available. In addition to the 40,640 metric ton (40,000 long ton) drydock, there are two other floating drydocks, the larger of which can accommodate ships up to 287 meters by 41 meters (943 ft by 133 ft).

In July 1982, the company transferred a 40,640 metric ton (40,000 long ton) floating drydock from its San Francisco Division to Seattle. A new 137 metric ton traveling whirley crane on the adjacent 305-meter (1,000 ft) concrete pier serves the floating drydock and the adjacent berths. A second pier was rebuilt in concrete and lengthened to give the yard a 427 meter (1,400 ft) berth with a 12 meter (40 ft) water depth.

Two wharves and five piers provide a total of 1,834 meters (6,017 ft) of berthing space for outfitting and repair. The yard is serviced by 15 whirley traveling cranes, with lifting capacities ranging from 23 metric tons to 136 metric tons.

In mid-1991, total employment at the Seattle plant was 1,278, down from 2,552 at mid-1990.



1. Dry Dock #1
2. Dry Dock #2
3. Dry Dock #3 (Emerald Sea)
4. End Launch Ways
5. Side Launch Ways
6. Main Steel Fabrication Shop
7. Burning and Fabrication Shop
8. Machine Shop
9. Shot Blast and Paint Facility
10. Warehouse
11. Administration Building
12. Repair Superintendent's Office
13. Engineering
14. Pipe Shop
15. Main Tool Room
16. Carpenter Shop
17. Electrical Shop
18. Rigging Shop
19. Sheet Metal Shop
20. Main Entrance
21. Mold Loft
22. Stores
23. South Fabrication Shop

Piers	Construction	Size~	Cap.	Crane Service		Crane Mfg.
				Capacity	Reach	
Pier 1A	Wood	500' L	N/A	45 T	100'	Washington
Pier 1	Wood	545' L	N/A	40 T	95'	Washington
				45 T	70'	Coby
Pier 2	Wood	500' L	N/A	45 T	130'	Washington
Pier 3	Wood Pile, Concrete Deck	475' L	N/A	45 T	90'	Washington
Pier 4	Wood/Concrete	1400' L	N/A	45 T	90'	Clyde
				45 T	90'	Washington
				100 T	130'	Clyde
				45 T	100'	Coby
Pier 5	Concrete	968' L	N/A	35 T	90'	Washington
				150 T	200'	Washington
Pier 6	Wood Pile, Concrete Deck	600' L	N/A	40 T	95'	Washington
				45 T	94'	Coby

Dry Docks	Construction	Size	Cap.	Crane Service	Max Draft Over Keel Blocks
Dry Dock No. 1	Floating/Steel	528' x 27' 5"	17,500 LT	Pier 4 Cranes	30'
Dry dock No. 2	Floating/Steel	352' x 21'	5,700 LT	Pier 6 Cranes	19'
Dry Dock No. 3	Floating/Steel	803' x 41'	40,000 LT	Pier 5 Cranes & (2) 25 T Wingwall Cranes	30'

17. Trinity Industries, Inc. - Beaumont Yard

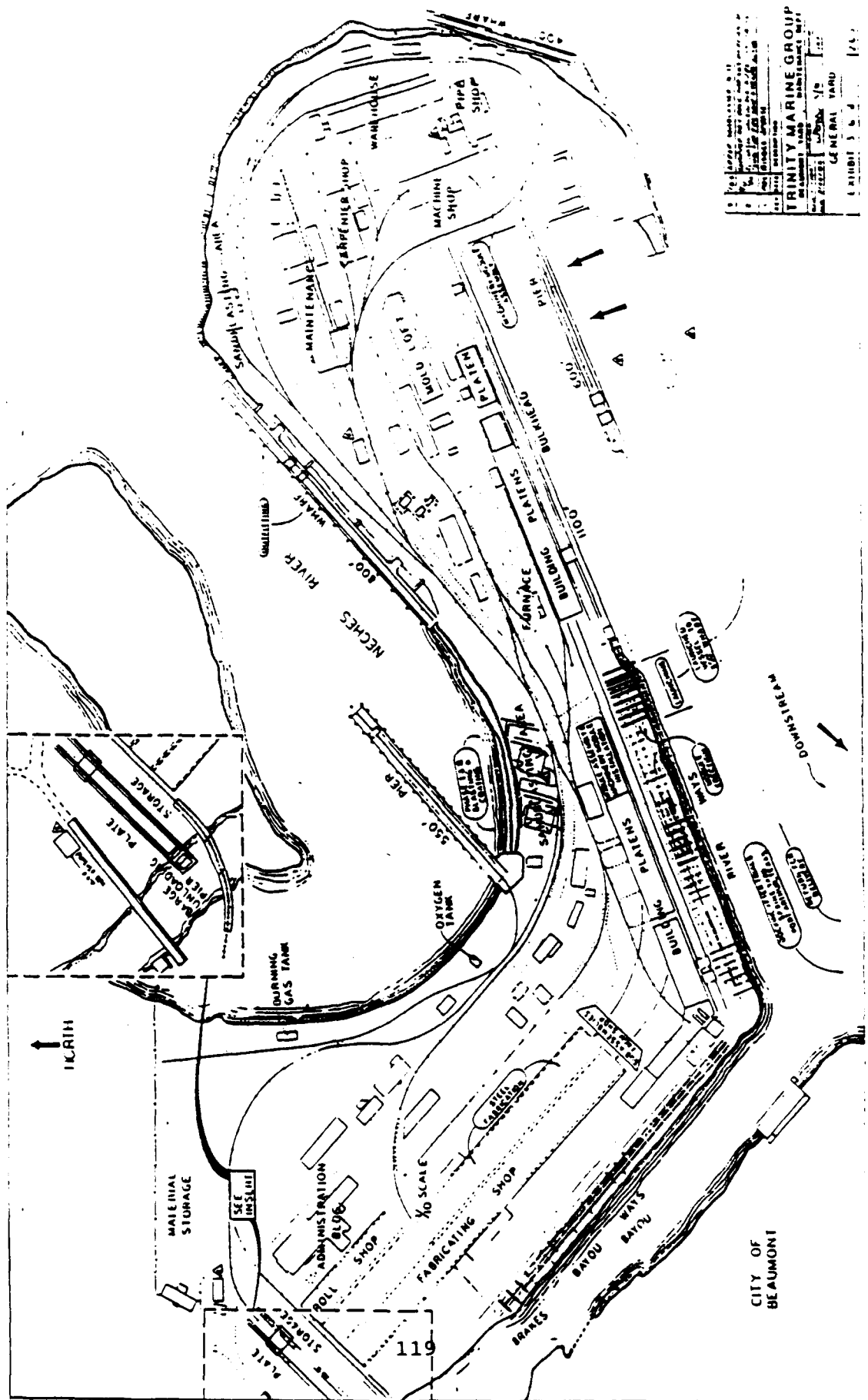
This shipyard, located on the Neches River in Beaumont, Texas, was established in 1917 by Beaumont Shipbuilding and Drydock Company, which built C1-A cargo ships and Navy minesweepers during World War II. In 1947, the yard was acquired by Bethlehem Steel Corporation, which pioneered the design and production of mobile offshore drilling rigs, drill ships, offshore oil and gas facilities and barges. After closure in mid-1988, the yard was acquired and reopened in mid-1989 by Trinity Industries, Inc., of Dallas, Texas.

Trinity's Beaumont yard is highly mechanized. In the early 1970s, a multimillion-dollar panel line and material handling facilities were installed. In recent years, capital improvements included installation of a CNC plasma burning machine, larger plate bending rolls, larger overhead bridge cranes, pipe burning and bending equipment, a pipe fabrication shop, improved welding equipment, mobile cranes, and improved building platens.

Trinity-Beaumont has one side-launching way that can accommodate ships up to approximately 267 meters by 32 meters (875 ft by 105 ft). Also, the yard has recently acquired under lease a floating drydock (AFDM-2) from the Navy. This drydock, which can accommodate a vessel up to 198 meters (650 ft) in length with a beam of 29 meters (95 ft), is expected to be in operation by December 1991.

There are 1,402 meters (4,600 ft) of fully-serviced piers and wharves and mobile equipment for servicing ships or other vessels at pierside or anchorage. With a 508 metric ton (500 ton) lift capacity, the company's barge-mounted "Big Bessie" is the largest floating derrick between Houston and New Orleans.

Employment at Trinity's Beaumont facility at mid-1991 was 95 personnel. While awaiting a major marine construction contract, Trinity is utilizing the yard's flexibility by repairing and servicing railcars, building LPG tank barges and both inland and ocean hopper barges.



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	10. 1000 N. 100th St., Anchorage, Alaska 99504

**APPENDIX B: LEGISLATION CONCERNING THE GIBBONS BILL**

## SHIPBUILDING TRADE REFORM ACT OF 1992

MARCH 6, 1992.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. JONES of North Carolina, from the Committee on Merchant Marine and Fisheries, submitted the following

### REPORT

[To accompany H.R. 2056]

[Including cost estimate of the Congressional Budget Office]

The Committee on Merchant Marine and Fisheries, to whom was referred subsequently on November 4, 1991, the bill (H.R. 2056) to amend the Tariff Act of 1930 to require that subsidy information regarding vessels be provided upon entry within customs collection districts and to provide effective trade remedies under the countervailing and antidumping duty laws against foreign-built ships that are subsidized or dumped, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

The amendment is as follows:

Strike all after the enacting clause and insert the following:

#### TITLE I—FAIR TRADE FOR THE COMMERCIAL SHIPBUILDING AND REPAIR INDUSTRY

##### SECTION 101. SHORT TITLE.

This title may be cited as the Shipbuilding Trade Reform Act of 1992.

##### SEC. 102. CONGRESSIONAL FINDINGS AND PURPOSE.

(a) FINDINGS.—The Congress finds that—

(1) in 1981, the United States Government terminated funding for the construction differential subsidy program, thereby ending direct subsidization of commercial shipbuilding in the United States;

(2) the international market for shipbuilding and ship repair continues to be distorted by a wide array of foreign subsidies including direct grants, preferential financing, equity infusions, research and development assistance, restructuring aid, special tax concessions, debt forgiveness, and other direct and indirect assistance;

(3) existing United States trade laws and trade agreements provide limited redress to domestic producers of ships for the trade-distorting subsidies and dumping practices of foreign shipbuilders; and

ES-005

(4) a strong, effective multilateral agreement among all shipbuilding nations to eliminate trade-distorting practices in the shipbuilding and repair industry is the best means of providing for fair international competition, however, absent such an agreement, changes in United States trade laws are necessary to provide domestic producers of ships greater protection against unfair trade practices than is provided under current law.

(b) **PURPOSES.**—It is the purpose of this title to ensure fair trade in the commercial shipbuilding and repair industry by providing for effective trade remedies against subsidized and dumped foreign commercial ships.

**SEC. 102. SUBSIDIZED SHIPYARD LIST AND REQUIRED VESSEL ENTRY DOCUMENTATION REGARDING CONSTRUCTION AND REPAIR SUBSIDIES.**

(a) Part II of title IV of the Tariff Act of 1930 (19 U.S.C. 1431 et seq.) is amended by inserting after section 435 the following new sections:

**"SEC. 435A. LISTING OF SUBSIDIZED SHIPYARDS.**

"(a) **ESTABLISHMENT OF LIST.**—The administering authority shall establish and maintain a list of all foreign shipyards that receive or benefit from, directly or indirectly, a subsidy for the construction or repair of vessels.

"(b) **INVESTIGATION.**—The administering authority shall conduct an investigation to decide whether there is reasonable cause to believe that a foreign shipyard receives or benefits from a subsidy for the construction or repair of vessels. That investigation shall be initiated when the administering authority has reasonable cause to believe that a shipyard receives or benefits from, directly or indirectly, a subsidy for the construction or repair of vessels—

"(1) on the basis of information available to the administering authority; or

"(2) on petition for an investigation available to an interested party.

"(c) **DETERMINATION AFTER INVESTIGATION.**—

"(1) **IN GENERAL.**—Based on the investigation conducted under subsection (b), the administering authority shall make a determination as to whether a shipyard receives or benefits from, directly or indirectly, a subsidy for the construction or repair of vessels.

"(2) **NOTIFICATION AND PUBLICATION OF LISTING.**—If the administering authority determines that a foreign shipyard receives or benefits from, directly or indirectly, a subsidy for the construction or repair of vessels, the administering authority shall—

"(A) add the foreign shipyard to the list established under subsection (a);

"(B) notify that shipyard of its inclusion on that list; and

"(C) publish notice of that determination in the Federal Register.

"(3) **TIME LIMIT ON MAKING DETERMINATION.**—The administering authority shall make a determination under this subsection within 90 days of receipt of the information or petition that serves as the basis for initiating an investigation under subsection (b).

"(4) **PUBLICATION OF LIST.**—The administering authority shall publish the list of foreign shipyards receiving or benefiting from a subsidy for the construction or repair of vessels at least once every 6 months.

"(d) **EMERGENCY LISTING.**

"(1) **IN GENERAL.**—If at any time the administering authority finds a reasonable basis to suspect that a foreign shipyard may be receiving or benefiting from a subsidy for the construction or repair of vessels, the administering authority may add that shipyard to list established under subsection (a). The administering authority shall publish notice of that emergency listing in the Federal Register, which shall also include a schedule for investigation of the alleged subsidy.

"(2) **INVESTIGATION AND DETERMINATION OF EMERGENCY LISTING.**—Within 90 days after publication of an listing under paragraph (1), the administering authority shall conclude the investigation and make a determination under subsection (c) whether the shipyard is receiving or benefiting from a subsidy for the construction or repair of vessels.

"(e) **REVIEW OF LISTING.**—If a foreign shipyard that is listed under subsection (c) requests a review of that determination within 30 days after the date of the publication of the determination in the Federal Register under subsection (c)(2), the administering authority shall review that listing.

"(f) **SUBSEQUENT RECONSIDERATION AND REMOVAL OF LISTING.**

"(1) **RECONSIDERATION.**—The administering authority may reconsider a listing under subsection (c)—

"(A) on application from a foreign shipyard added to the list under subsection (c) alleging changed circumstances sufficient to warrant removal;

eration of that listing and notice of that reconsideration is published in the Federal Register; or

"(B) if the administering authority receives information concerning the signing of an agreement between the United States Government and the foreign country in which the shipyard is located that provides for the immediate elimination by that country of construction and repair subsidies for vessels.

"(2) **RETRACTION ON RECONSIDERATION.**—A foreign shipyard may not make more than one application for reconsideration under this paragraph in any calendar year.

"(3) **BURDEN OF PERSUASION.**—In any reconsideration under paragraph (1)(A), the burden of persuasion with respect to whether there are changed circumstances sufficient to warrant a determination that the foreign shipyard should be removed from the list is on the applicant.

"(4) **REMOVAL FROM LIST.**—The administering authority may remove a foreign shipyard from the listing only if—

"(A) the foreign shipyard has proven that the foreign shipyard does not receive or benefit from a subsidy, directly or indirectly, for the construction or repair of vessels; or

"(B) there is a signed agreement between the United States Government and the foreign country in which the shipyard is located that provides for the immediate elimination of construction and repair subsidies for vessels.

"(g) **PENALTY FOR FALSE INFORMATION AND RENEWAL OF SUBSIDIES.**—The administering authority shall place a foreign shipyard on the list established under subsection (a) for a period of not less than 5 years if the administering authority determines—

"(1) that the foreign shipyard, or government of the country in which the shipyard is located, provided the administering authority with false or misleading information during the investigation conducted under subsection (b); or

"(2) after making a determination under subsections (c) or (f) that the shipyard is not subsidized, that the shipyard receives or benefits from, directly or indirectly, any new construction subsidies.

"(h) **ACTION AGAINST THE UNITED STATES GOVERNMENT.**—An interested party may bring a civil action against the United States Government, in an appropriate district court of the United States, for failure of the administering authority to use due diligence to add a subsidized foreign shipyard to the list established under subsection (a).

**"SEC. 435B. CONSTRUCTION SUBSIDY CERTIFICATION REQUIRED OF VESSELS FOR ENTRY.**

"(a) **CERTIFICATION REQUIRED AT ENTRY.**—The master of a vessel shall, at the time of making formal entry of the vessel under section 434 or 435, deposit with the appropriate customs officer a construction subsidy certification for the vessel.

"(b) **CONSTRUCTION SUBSIDY CERTIFICATIONS.**—

"(1) **IN GENERAL.**—For purposes of this section, a construction subsidy certification for a vessel is a document that—

"(A) is either—

"(i) issued by the administering authority under subsection (d), or

"(ii) in a form as the administering authority shall prescribe and signed by either the vessel owner or person that constructed the vessel; and

"(B) attests, regarding any construction carried out with respect to the vessel, that the construction meets one of the requirements set forth in paragraph (2).

"(2) **CERTIFICATION REQUIREMENTS.**—The requirements referred to in paragraph (1)(B) are as follows:

"(A) No construction subsidy was granted or otherwise provided with respect to the construction.

"(B) The construction was carried out with the benefit of one or more subsidies, all of which were granted or otherwise provided before the date of the enactment of this section.

"(C) The construction was carried out pursuant to a specific contract entered into before October 16, 1991.

"(D) The construction was carried out with the benefit of one or more subsidies that were granted or otherwise provided during the 2-year period beginning on the date of the enactment of this section, but an amount equal to the . . .

"(E) The construction was carried out with the benefit of one or more subsidies that were granted or provided on or after the date of the enactment of this section, but an amount equal to the value of each construction subsidy, reduced by any amount repaid under paragraph (D), has been paid to the Treasury of the United States.

"(F) The construction was carried out in a foreign country which is signatory to a trade agreement with the United States that provides for the immediate elimination of construction subsidies for vessels.

"(G) The construction was carried out in a shipyard that, at the time of contracting for construction of the vessel, was not on the list established under section 435A(a).

"(3) APPLICATION OF CERTIFICATION REQUIREMENTS.—With respect to vessels constructed in a foreign country which is a signatory to a trade agreement with the United States that provides for the elimination of construction subsidies for vessels, the requirements set forth in paragraph (2) shall be applied in a manner consistent with that agreement.

"(c) ENFORCEMENT.—If the Secretary has reason to believe that an unlawful act under section 436 relating to this section has been committed, the Secretary shall—

"(1) undertake any investigation necessary to ascertain whether action authorized under section 436 against the master of the vessel, or the vessel, or both, is warranted; and

"(2) If the vessel is not covered by a construction subsidy certification issued under subsection (d) and the information obtained during that investigation indicates that there is reason to believe that the vessel does not meet any certification requirement under subsection (b), so inform the administering authority and provide that information to the authority.

"(d) ISSUANCE OF CONSTRUCTION SUBSIDY CERTIFICATIONS BY THE ADMINISTERING AUTHORITY.—

"(1) APPLICATIONS.—The owner or lessee of a vessel, or the builder of a vessel, may apply to the administering authority for the issuance of a construction subsidy certification for that vessel. An application shall be accompanied by any documentation that the administering authority may require for purposes of establishing the eligibility of the vessel for that certification, including, if compliance with the requirement in subsection (b)(2) (D) or (E) is alleged, information regarding the amount of each construction subsidy granted or provided with respect to the vessel and the payment or repayment of amounts equal to the value of the construction subsidy.

"(2) ACTION ON APPLICATIONS.—After considering the documentation submitted with an application under paragraph (1), the administering authority, within 90 days after the day on which the application was received, shall decide whether to issue or deny the construction subsidy certification. The administering authority shall make the decision publicly available.

"(3) DENIAL OR CONDITION OF ISSUANCE OF CERTIFICATION.—The administering authority shall, if a construction subsidy certification for a vessel is denied under paragraph (2), provide the applicant with a written statement of the reasons for the denial or condition. The applicant may, within 14 days after the date of the written statement, request a review of the denial or condition under subsection (e)(3).

"(e) DETERMINATIONS AND REVIEWS.—

"(1) PRELIMINARY INVESTIGATION.—The administering authority shall—

"(A) on the basis of information available to the administering authority; or

"(B) on the basis of information provided by the Secretary under subsection (c)(2), or

"(C) upon petition therefor from an interested party; initiate a preliminary investigation to decide whether there is reasonable cause to believe that a vessel does not meet the construction subsidy certification requirements under subsection (c).

"(2) DETERMINATIONS AFTER PRELIMINARY INVESTIGATIONS.—If the administering authority makes an affirmative decision under paragraph (1) with respect to a vessel, the administering authority shall determine whether the vessel meets any construction subsidy certification requirement under subsection (b)(2). If the administering authority makes a negative determination on the basis of failure to meet the requirement under subparagraph (D) or (E) of subsection (b)(2), the administering authority shall calculate, and set forth in the determination, the aggregate value of the subsidy or subsidies used in the construction of the vessel.

"(3) REVIEW OF CERTIFICATION DENIALS AND CONDITIONS.—If a person whose application for a construction subsidy certification was denied or conditioned under subsection (d)(3) makes a timely request for review under this paragraph, the administering authority shall review the denial or condition.

"(4) CORRECTIVE ACTIONS.—If the administering authority makes a negative determination under paragraph (2), or upholds any certification denial or condition after review under paragraph (3), the administering authority shall set forth in the determination or review decision the action which must be taken in order to satisfy a requirement for construction subsidy certification for the vessel under subsection (b). The builder of the vessel shall be primarily responsible, and the vessel owner or operator secondarily responsible, for taking any corrective action. If that action is taken, the administering authority shall issue a construction subsidy certification for the vessel and that certification shall be treated as a construction subsidy certification issued under subsection (d).

"(5) CONSEQUENTIAL EFFECTS.—After a negative determination under paragraph (2), or a decision under paragraph (3) upholding a certification denial or condition, becomes final and until a construction subsidy certification for the vessel concerned is issued under paragraph (4), neither that vessel, nor any other vessel that is owned or leased by the owner of that vessel, may—

"(A) arrive at any port or place in the United States; or

"(B) remain at any port or place in the United States.

"SEC. 436C. DECLARATION OF REPAIR SUBSIDIES REQUIRED OF VESSELS FOR ENTRY.

"(a) SUBSIDY DECLARATION AND SURETY REQUIREMENTS AT ENTRY.—

"(1) IN GENERAL.—The owner or master of a vessel shall, at, or before, the time of making formal entry of a vessel under section 434 or 435, deposit with the appropriate customs officer a subsidy declaration for repairs made to that vessel since the vessel last entered the United States.

"(2) INFORMATION IN DECLARATION.—The subsidy declaration made under paragraph (1) shall include a statement attesting to whether any repairs were made in a foreign shipyard since the vessel last entered the United States and, of repairs were made in a foreign shipyard, include—

"(A) a list and description of each repair made;

"(B) an identification of each foreign shipyard in which a repair was made and the date of that repair;

"(C) the dollar value of the repair made in that shipyard; and

"(D) any other information required by the administering authority.

"(3) SURETY REQUIREMENTS.—

"(A) REQUIREMENT ON ENTRY.—On or before entry, the owner or master of the vessel shall file with the customs officer a bond, proof of insurance, or any other surety, as the administering authority may require, in an amount equal to at least 2 times the dollar value of the repairs declared under paragraph (2) that were made in a shipyard listed on the list established under section 435A(a) at the time of the repair.

"(B) FORM OF SURETY.—A bond, proof of insurance, or any other surety filed under paragraph (A) shall be in a form determined by the administering authority to be satisfactory to insure the financial responsibility of that vessel owner to pay for any repair subsidies. Any bond submitted under this section shall be issued by a surety company found acceptable by the Secretary.

"(C) CLAIMS AGAINST SURETY.—A bond, insurance, or other surety filed under paragraph (A) shall be available to pay for any repair subsidy determined by the administering authority or any penalty assessed under section 436.

"(b) APPLICATION FOR REPAIR SUBSIDY DETERMINATION.—Within 30 days after the filing of the bond, proof of insurance or other surety under subsection (a)(3), the vessel owner may apply to the administering authority for the issuance of a repair subsidy determination for that vessel. An application shall be accompanied by any documentation that the administering authority may require for purposes of making the determination, including information regarding the amount of each repair subsidy and any repayment of the repair subsidy to the foreign government.

"(c) REPAYMENT OF REPAIR SUBSIDY.—

"(1) IN GENERAL.—A vessel owner shall pay to the United States Government an amount equal to any repair subsidy from which the vessel owned by that person has received or benefitted.

"(2) PARTIAL PAYMENT.—

subsidy which is to be paid to the Treasury of the United States. Notice of this finding shall be provided to the owner or his agent and published in the Federal Register. At any time before the preliminary finding is made, an interested party may file information with the administering authority regarding the validity or accuracy of the information provided by the vessel master or owner.

"(3) **PETITION FOR REVIEW.**—Unless a petition for review of that determination is received within 15 days after the date of notification under paragraph (2), from either the owner or an interested party, the finding by the administering authority is final.

"(d) **FINAL REPAIR SUBSIDY DETERMINATIONS.**—If the owner or interested party files a petition for review of the preliminary determination within the 15 days, the administering authority shall make a final determination within 30 days after the date the petition is filed.

"(e) **FORFEITURE OF SURETY.**—Unless a repair subsidy payment is made within 30 days of the final order, the face amount guaranteed by the bond, insurance, or other surety shall be forfeited to the United States Government.

"(f) **INSUFFICIENT SURETY.**—If the amount of the surety is insufficient to cover the amount of the repair subsidy ordered to be repaid, then the vessel, and any other vessel owned by that owner, may not enter or clear the United States until the full amount of the repair subsidy is paid to the United States Government.

—SEC. 435. **DEFINITIONS AND ADMINISTRATIVE PROVISIONS RELATED TO DETERMINATIONS AND REVIEWS UNDER SECTION 435A, 435B AND 435C.**

"(a) **DEFINITIONS.**—As used in this section and sections 435A–435C:

"(1) The term 'administering authority' means the officer of the United States responsible for determining under subtitle A of title VII whether subsidies are provided with respect to imported merchandise.

"(2) The term 'construction' includes reconstruction.

"(3) The term 'interested party' means—

"(i) a person that engages in ship construction in the United States; .

"(ii) a certified union of recognized union or group of workers which is representative of an industry that engages in ship construction in ship construction in the United States;

"(iii) a trade or business association, a majority of whose members engage in ship construction in the United States; and

"(iv) an association, a majority of whose members is composed of interested parties described in clauses (i), (ii), and (iii) with respect to ship construction.

"(4) The term 'foreign shipyard' includes a ship construction or repair facility located in a foreign country that is directly or indirectly owned, controlled, managed, or financed by a foreign shipyard that receives or benefits from a subsidy.

"(5) The term 'subsidy' includes, but is not limited to, any of the following:

"(A) Officially supported export credits and development assistance.

"(B) Direct official operating support to the commercial shipbuilding and repair industry, or to a related entity that favors the operation of shipbuilding and repair, including—

"(i) grants;

"(ii) loans and loan guarantees other than those available on the commercial market;

"(iii) forgiveness of debt;

"(iv) equity infusions on terms inconsistent with commercially reasonable investment practices;

"(v) preferential provision of goods and services; and

"(vi) public sector ownership of commercial shipyards on terms inconsistent with commercially reasonable investment practices.

"(C) Direct official support for investment in the commercial shipbuilding and repair industry, or to a related entity that favors the operation of shipbuilding and repair, including the kinds of support listed in clauses (i) through (v) of subparagraph (B), and any restructuring support, except public support for social purposes directly and effectively linked to shipyard closures.

"(D) Assistance in the form of grants, preferential loans, preferential tax treatment, or otherwise, that benefits or is directly related to shipbuilding and repair for purposes of research and development that is not equally open to domestic and foreign enterprises.

"(E) Tax policies and practices that favor the shipbuilding and repair industry, directly or indirectly, such as tax credits, deductions, exemptions and preferences, including accelerated depreciation, if the benefits are not generally available to persons or firms not engaged in shipbuilding or repair.

"(F) Any official regulation or practice that authorizes or encourages persons or firms engaged in shipbuilding or repair to enter into anticompetitive arrangements.

"(G) Any indirect support directly related, in law or in fact, to shipbuilding and repair at national yards, including any public assistance favoring shipowners with an indirect effect on shipbuilding or repair activities, and any assistance provided to suppliers of significant inputs to shipbuilding, which results in benefits to domestic shipbuilders.

"(H) Any export subsidy identified in the Illustrative List of Export Subsidies in the Annex to the Agreement on Interpretation and Application of Articles VI, XVI, and XXIII of the General Agreement on Tariffs and Trade or any other export subsidy that may be prohibited as a result of the Uruguay Round of trade negotiations.

"(6) The term 'vessel' means any self-propelled, sea-going vessel—

"(A) of not less than 100 gross tons, as measured under the International Convention of Tonnage Measurement of Ships, 1969; and

"(B) not exempt from entry under section 441.

"(b) **HEARING AND REVIEW PROCEDURES.**—The administering authority shall make determinations under sections 435A(c), 435B(e)(2), and 435Q(d) and conduct reviews under section 435A(b), (e), (f), section 435B(e)(3), and section 435Q(c), under the hearing procedures applied by the administering authority under section 774 with respect to hearings required or permitted under title VII. A determination by the administering authority under section 435A(c), 435B(e)(2), or 435Q(d) is subject to judicial review under section 516A under the applicable procedures and standards applied under that section for reviewable determinations described in subsection (a)(2)(B) of that section.

"(c) **PROPRIETARY INFORMATION.**—Information submitted to the administering authority in regard to the making of any determination under sections 435A(c), 435B(e)(2), and 435Q(d) and reviews conducted under section 435A(b), (e), (f), section 435B(e)(3), and section 435Q(c), shall be treated as proprietary if it fulfills the requirements of section 777(b). Access to proprietary information under protective order shall be permitted under, and governed by, section 777(c).

"(d) **INFORMATION USED IN MAKING DETERMINATIONS OR REVIEWS.**—The administering authority shall verify all information relied upon in making any determination under sections 435A(c), 435B(e)(2), and 435Q(d) or review under section 435A(b), (e), (f), section 435B(e)(3), and section 435Q(c). If the administering authority is unable to verify the information submitted, the authority shall use the best information available as the basis for action. Whenever a party refuses or is unable to produce information requested in a timely manner and in the form provided, the administering authority shall use the best information otherwise available.

"(e) **PUBLIC AVAILABILITY OF DETERMINATIONS AND REVIEW DECISIONS.**—The administering authority shall make available for public inspection the text of all determinations and review decisions made under sections 435A–435C.

"(f) **SPECIAL PROVISIONS RELATING TO THE SUBSIDIZED SHIPYARD LIST.**—

(1) **STATUTORY LISTINGS.**—For purposes of section 435A(a) of the Tariff Act of 1930 (as added by subsection (a)), unless the administering authority determines, with clear and convincing evidence, that a foreign shipyard does not receive or benefit from, directly or indirectly, subsidies, a foreign shipyard (including a shipyard in a country that was a party to negotiating a multilateral agreement for the elimination of shipbuilding subsidies in the Organization for Economic Cooperation and Development Working Party 6 on October 16, 1991) is deemed to be on the list established under that section until the earlier of the date—

(A) the administering authority publishes the list of subsidized shipyards under subsection (c); or

(B) the foreign country in which the shipyard is located signs a trade agreement with the United States that provides for the immediate elimination of subsidies for that shipyard.

(2) **TIME LIMIT ON INITIAL LISTINGS.**—Within 120 days after the date of enactment of this Act, the administering authority shall—

(A) conduct an investigation under section 435A(b) of the Tariff Act of 1930

(B) make a determination under section 435A(c) of that Act; and  
(C) publish in the Federal Register a list of the foreign shipyards that have been determined to be receiving or benefiting from a subsidy for the construction or repair of vessels.

(c) **ENACTMENT OF CIVIL ACTION REMEDIES.**—Section 435A(i) of the Tariff Act of 1930 (as added by subsection (a)) takes effect one year after the date of enactment of this Act.

(d) **GRANDFATHERED REPAIRS.**—Section 435C of the Tariff Act of 1930 (as added by subsection (a)) applies to repairs made to a vessel under a contract entered into after the date of enactment of this Act.

#### SEC. 104. CONFORMING AMENDMENTS.

(a) **ENTRY REQUIREMENTS FOR VESSELS.**—Section 434 of the Tariff Act of 1930 (19 U.S.C. 1934) is amended by inserting "its subsidy certification (if required under section 435B)," after "or document in lieu thereof."

(b) **PENALTIES FOR VIOLATIONS OF ARRIVAL, REPORTING, AND ENTRY REQUIREMENTS.**—Section 436(a) of the Tariff Act of 1930 (19 U.S.C. 1436(a)) is amended—

(1) by redesignating paragraph (4) as paragraph (7);

(2) by striking "or" at the end of paragraph (3);

(3) by inserting after paragraph (3) the following:

"(4) to present any forged, altered, or false subsidy certification to a customs officer under section 435B(a) or 435C(a) any vessel to which a prohibition on arrival in the United States applies under section 435B(e)(6);

"(6) to fail to remove promptly from the United States any vessel to which a prohibition on remaining in the United States applies under section 435B(e)(6); or"; and

(4) by striking "(9)" in paragraph (7) (as redesignated by paragraph (1)) and inserting "(6)".

#### SEC. 105. TREATMENT OF VESSELS UNDER THE COUNTERVAILING AND ANTIDUMPING DUTY LAWS.

(a) **IN GENERAL.**—Subtitle D of title VII of the Tariff Act of 1930 is amended by adding after section 771B the following new section:

##### SEC. 771C. SPECIAL RULES IN APPLYING TITLE TO FOREIGN-MADE VESSELS.

"(a) **DEFINITION.**—The term 'vessel' means any vessel of a kind described in heading 8901 or 8902.00.00 of the Harmonized Tariff Schedule of the United States of not less than 100 gross tons, as measured under the International Convention on Tonnage Measurement of Ships, 1969.

"(b) **VESSELS CONSIDERED AS MERCHANDISE.**—Vessels are merchandise for purposes of this title.

"(c) **APPLICATION OF SUBTITLES A AND B.**—

"(1) **IN GENERAL.**—In applying subtitles A and B with respect to vessels constructed, reconstructed, or repaired in foreign countries—

"(A) a vessel shall be treated as sold for importation into the United States when a United States person enters into a contract for—

"(i) the construction or reconstruction of the vessel by, or the purchase for leasing, if the equivalent of a purchase) of the vessel after construction or reconstruction from, the builder; or

"(ii) the repair of the vessel; and

"(B) a vessel sold for importation into the United States shall be treated as being offered for entry for consumption under the tariff laws at the time of its first arrival at a port or place in the United States after construction, reconstruction, or repair, regardless of where the vessel is registered or documented.

"(2) **DEFINITION.**—For purposes of paragraph (1), the term 'United States person' means—

"(A) any individual or entity described in subsection (a) of section 12102 of title 46, United States Code;

"(B) any agent or other person acting on behalf of any individual or entity referred to in subparagraph (A); or

"(C) any person directly or indirectly owned or controlled by any individual or entity referred to in subparagraph (A).

(b) **PROSPECTIVE APPLICATION TO CONTRACTS.**—The amendments made by subsection (a) of this section apply to a vessel built or repaired under a contract entered into after the date of enactment of this Act.

#### SEC. 106. UNITED STATES CONSTRUCTION SUBSIDY PROGRAMS.

(a) **GOVERNMENT-REFUELLED CARCO.**—Section 901(b) of the Merchant Marine Act, 1936 (46 App. U.S.C. 1241(b)) is amended—

(1) in paragraph (1), by striking "For purposes of this section, the term 'privately owned United States-flag commercial vessels'" and all that follows through the end of the paragraph and inserting a period; and

(2) by adding at the end the following new paragraph:

"(3) In this section, 'privately owned United States-flag commercial vessels' does not include a vessel (until the vessel has been documented under chapter 121 of title 46, United States Code, for a period of 3 years) that—

"(A)(i) was built and, if rebuilt, rebuilt outside the United States; or

"(ii) for a vessel operated by an ocean common carrier (as defined in section 3 of the Shipping Act of 1984 (46 App. U.S.C. 1702)), is built under a contract entered into after October 16, 1991 and has not been issued a construction subsidy certification under section 435B of the Tariff Act of 1930; or

"(B) was registered under the laws of a foreign country."

(b) **CAPITAL CONSTRUCTION FUND.**—Section 607(k) of the Merchant Marine Act, 1936

(1) **MERCHANT MARINE ACT.**—Section 607(k) of the Merchant Marine Act, 1936 (46 App. U.S.C. 1171) is amended—

(A) by amending paragraph (1)(A) to read as follows:

"(A)(i) constructed and reconstructed (if applicable) in the United States; or

"(2) if constructed or reconstructed in a foreign shipyard under a contract entered into after October 16, 1991, has been issued a construction subsidy certification under section 435B of the Tariff Act of 1930";

(B) by amending paragraph (2)(A) to read as follows:

"(A)(i) constructed and reconstructed (if applicable) in the United States; or

"(2) if constructed or reconstructed in a foreign shipyard under a contract entered into after October 16, 1991, has been issued a construction subsidy certification under section 435B of the Tariff Act of 1930";

(2) **CONFORMING AMENDMENT.**—Section 7518(i) of the Internal Revenue Code of 1986 (26 U.S.C. 7518(i)) is amended by striking "as in effect on the date of enactment of this section," and inserting "as in effect on the date of enactment of section 435B of the Tariff Act of 1930."

(c) **CONSTRUCTION RESERVE FUND.**—Section 511(a)(2) of the Merchant Marine Act, 1936 (46 App. U.S.C. 1161(a)) is amended to read as follows:

"(2) constructed in the United States after December 31, 1939," and all that follows through "insured under title XI of this Act as amended;" and inserting "(2A) constructed in the United States, or (B) the construction of which has been aided by a mortgage insured under title XI of this Act, or (C) if constructed in a foreign shipyard under a contract entered into after October 16, 1991, has been issued a construction subsidy certification under section 435B of the Tariff Act of 1930; and"

(d) **OPERATING DIFFERENTIAL SUBSIDY.**—Section 601(a)(1) of the Merchant Marine Act, 1936 (46 App. U.S.C. 1171(a)) is amended by striking "and that such vessel or vessels were built in the United States," and all that follows through "prior to such date," and inserting "and that the vessel was built in the United States or, if constructed in a foreign shipyard under a contract entered into after October 16, 1991, has been issued a construction subsidy certification under section 435B of the Tariff Act of 1930."

(e) **CONSTRUCTION LOAN GUARANTEES.**—Section 1103(b) of the Merchant Marine Act, 1936 (46 App. U.S.C. 1273(b)) is amended—

(1) after "(b)" by inserting "(1)", and

(2) by adding at the end the following new paragraph:

"(2) The Secretary may not guarantee an obligation under this title unless the vessel—

"(A) was built in the United States; or

"(B) if constructed in a foreign shipyard under a contract entered into after October 16, 1991, has been issued a construction subsidy certification under section 435B of the Tariff Act of 1930."

(f) **PRIORITY LOAN GUARANTEES FOR VESSELS IN COASTWISE TRADE.**—Section 1103 of the Merchant Marine Act, 1936 (46 App. U.S.C. 1273) is amended by adding at the end the following new subsection:

"(e) When making a...

mitments for vessels that will be engaged in the coastwise trade over guarantee or commitments for vessels that will be engaged in the foreign commerce." (g) **TRADE IN OR OVERSEAS VESSELS**—Section 510(a)(2)(B) of the Merchant Marine Act, 1936 (46 App. U.S.C. 1160(a)(2)(B)) is amended to read as follows:

"(B) is built in the United States or, if constructed in a foreign shipyard under a contract entered into after October 16, 1991, has been issued a construction subsidy certification under section 435B of the Tariff Act of 1930, and documented under chapter 121 of title 46, United States Code."

#### SEC. 107. COST ESTIMATE.

The applicable cost estimate of this title for all purposes of sections 252 and 253 of the Balanced Budget and Emergency Deficit Control Act of 1985 shall be as follows:

	Fiscal year—			
	1992	1993	1994	1995
Changes in efforts	(1)	(1)	(1)	(1)
Changes in receipts	0	0	0	0

<sup>1</sup> Not applicable.

### TITLE II.—BOAT TAX REPEAL AND STRATEGIC SEALIFT FUND

#### SEC. 201. COAST GUARD RECREATIONAL BOAT TAX REPEAL.

(a) Section 2110(b) of title 46, United States Code, is amended—

(1) in paragraph (1)—

(A) by striking "1991, 1992"; and

(B) by striking "that is greater than 16 feet in length," and inserting "according to the schedule under paragraph (2) of this subsection"; and (2) by amending paragraph (2) to read as follows:

"(2) The fee or charge established under paragraph (1) of this subsection is as follows:

"(A) in fiscal year 1993—

"(i) for vessels of at least 19 feet in length but less than 20 feet, not more than \$25;

"(ii) for vessels of at least 20 feet in length but less than 27 feet, not more than \$35;

"(iii) for vessels of at least 27 feet in length but less than 40 feet, not more than \$50; and

"(iv) for vessels of at least 40 feet in length, not more than \$100;

"(B) in fiscal year 1994—

"(i) for vessels of at least 25 feet in length but less than 27 feet, not more than \$35;

"(ii) for vessels of at least 27 feet in length but less than 40 feet, not more than \$50; and

"(iii) for vessels of at least 40 feet in length, not more than \$100; and

"(C) in fiscal year 1995, for vessels of at least 65 feet in length, not more than \$100."

(b) The amendments made by this section are effective October 1, 1992.

#### SEC. 202. AUTOMATED TARIFF FILING AND INFORMATION SYSTEM.

(a) **DEFINITIONS.**—In this section—

(1) "Commission" and "conference" have the meaning given those terms under section 3 of the Shipping Act, 1984 (46 App. U.S.C. 1702);

(2) "common carrier" has the meaning given that term under section 3 of the Shipping Act, 1984 (46 App. U.S.C. 1702), and includes a "common carrier by water in interstate commerce" under the Shipping Act, 1916 (46 App. U.S.C. 801 et seq.), and a "common carrier by water in intercoastal commerce," under the Intercoastal Shipping Act, 1933 (46 App. U.S.C. 843 et seq.);

(3) "essential terms of service contracts" has the meaning given that term under section 8 of the Shipping Act, 1984 (46 App. U.S.C. 1707);

(4) "tariff" has the meaning given that term under section 3 of the Shipping Act, 1984 (46 App. U.S.C. 1702), and includes the rates, fares, and charges filed under the Shipping Act, 1916 (46 U.S.C. 801 et seq.) and the Intercoastal Shipping Act, 1933 (46 App. U.S.C. 843 et seq.).

(b) **TARIFF FORM AND AVAILABILITY.**—Notwithstanding any other law, according to the schedule under subsection (c)—

(1) common carriers and conferences shall file electronically with the Commission all tariffs and essential terms of service contracts required to be filed by section 8 of the Shipping Act, 1984 (46 App. U.S.C. 1707), the Shipping Act, 1916 (46 App. U.S.C. 801 et seq.), and the Intercoastal Shipping Act, 1933 (46 App. U.S.C. 843 et seq.); and

(2) the Commission shall make available electronically to any person, without time, quantity, or other limitation, both at the Commission Headquarters and from remote terminals, all tariff information and essential terms of service contracts filed in the Automated Tariff Filing and Information System database and all tariff information in the system enhanced electronically by the Commission at any time.

#### (c) **FILING SCHEDULE.**—

(1) New tariffs and essential terms of service contracts shall be filed electronically not later than June 1, 1992; and

(2) All other tariffs and essential terms of service contracts shall be filed not later than September 1, 1992.

#### (d) **Fees.**—

(1) The Commission shall charge—

(A) a fee of 35 cents for each minute of remote computer access by any individual of the information available electronically under this section; and

(B)(i) for electronic copies of the Automated Tariff Filing and Information database (in bulk), or any portion of the database, the cost of duplication, distribution, and user-dedicated equipment; and

(ii) a person operating or maintaining information in a database that has multiple tariff or service contract information obtained directly or indirectly from the Commission a fee of 35 cents for each minute that database is subsequently accessed by computer by any individual.

(2) A Federal agency is exempt from paying a fee under this subsection.

(3) The Commission may establish alternative fee schedules to the fees required under paragraph (1) of this subsection that will result in the collection of equivalent total annual receipts.

(e) **ENFORCEMENT.**—The Commission shall use systems controls or other appropriate methods to enforce subsection (d) of this section.

#### (f) **PENALTIES.**—

(1) A person failing to pay the fees established under subsection (b) of this section is liable to the United States Government for a civil penalty of not more than \$5000 for each violation.

(2) A person that willfully fails to pay the fees established under subsection (b) of this section commits a class A misdemeanor.

#### (g) **AUTOMATIC FILING IMPLEMENTATION.**—

(1) Software that provides for the electronic filing of data in the Automated Tariff Filing and Information System shall be submitted to the Commission for certification. Not later than 14 days after a person submits software to the Commission for certification, the Commission shall—

(A) certify the software if it provides for the electronic filing of data; and

(B) publish notice of that certification.

(2) The Secretary of the Treasury shall make available to the Commission, as a repayable advance in fiscal year 1992, not more than \$4 million, to remain available until expended. The Commission shall spend these funds to complete and upgrade the capacity of the Automated Tariff Filing and Information System to provide access to information under this section.

(3) Out of amounts collected by the Commission under this section, amounts shall be retained and expended by the Commission for fiscal year 1992 and each subsequent fiscal year, without fiscal year limitation, to carry out this section and pay back the Secretary under paragraph (2) of this subsection.

(4) Except for the amounts retained by the Commission under paragraph (3) of this subsection, fees collected under this section shall be deposited in the general fund of the Treasury as offsetting receipts.

(h) **CONFORMING AMENDMENT.**—Section 2 of the Act of August 16, 1989 (Public Law 101-92; 103 Stat. 601), is repealed.

#### SEC. 203. STRATEGIC SEALIFT FUND.

(a) **ESTABLISHMENT OF FUND.**—There is established in the Treasury

(1) amounts transferred to the Fund under subsection (b) of this section; and  
 (2) amounts credited to the Fund under subsection (e) of this section.

(b) **TRANSFER OF CERTAIN TREASURY RECEIPTS TO FUND.**—The Secretary of the Treasury shall transfer to the Fund an amount equal to the amounts deposited in the Treasury under section 202(g)(4).

(c) **INVESTMENT OF FUND ASSETS.**—

(1) The Secretary of the Treasury shall invest in full the amounts in the Fund. The investments may be made only in interest-bearing obligations of the United States Government or in obligations guaranteed as to both principal and interest by the Government. For this purpose, the obligations may be acquired on original issue at the issue price or by purchase of outstanding obligations at the market price.

(2) The purposes for which obligations of the United States Government may be issued under chapter 31 of title 31, United States Code, include the issuance at par of special obligations exclusively to the Fund. The special obligations shall—

(A) bear interest at a rate equal to the average rate of interest, computed as to the end of the calendar month next preceding the date of such issue, borne by all marketable interest-bearing obligations of the Government then forming a part of the public debt, except that when the average rate is not a multiple of one-eighth of one percent, the rate of interest of the special obligations shall be the multiple of one-eighth of one percent next lower than such average rate; and

(B) be issued only if the Secretary determines that the purchase of other interest-bearing obligations of the Government, or of obligations guaranteed as to both principal and interest by the Government or original issue or at the market price, is not in the public interest.

(d) **AUTHORITY TO SELL OBLIGATIONS.**—Any obligation acquired by the Fund (except special obligations issued exclusively to the Fund) may be sold by the Secretary of the Treasury at the market price, and such special obligations may be re-deemed at par plus accrued interest.

(e) **PROCEEDS FROM CERTAIN TRANSACTIONS CREDITED TO FUND.**—The interest on, and the proceeds from the sale or redemption of, any obligations held in the Fund shall be credited to and form a part of the Fund.

(f) **USE OF THE FUND.**—Subject to amounts being authorized for appropriation, the Secretary of Transportation shall use amounts in the Fund to—

- (1) provide a manpower base for vessels in the Ready Reserve Fleet; and
- (2) meet the sustenance and outfit requirements of the United States.

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